ARUP

BAM Nuttall Ltd

Victoria North HIF Infrastructure Works – Phase 1

Remediation and MMP Geoenvironmental Verification Report

Reference: VNIF-ARP-ZZ-YYY-RP-CG-0023

P01 | 18 September 2026



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1. Introduction

1.1 Background

Ove Arup & Partners Limited (Arup) was appointed by BAM Nuttall Ltd (BAM) to oversee remediation works undertaken by BAM at the Victoria North site on behalf of Manchester City Council (MCC) (the Client). Pell Frischmann was appointed by MCC to act as Technical Advisor and NEC Site Supervisor throughout the works.

1.1.1 Purpose of this report

The purpose of this document is to verify that the remediation was undertaken in accordance with the agreed Remediation Strategy [1] and Remediation Implementation Plan (RIP) [2]. This report covers the geoenvironmental aspects of the earthworks and remediation only.

Reference should be made to the RIP referenced VNIF-ARP-ZZ-YYY-RP-CG-0017 and addenda: 500 Series Ground Investigation Interpretation [3] and Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria [4]. These documents set out the requirements of the remediation and the information that was to be gathered to demonstrate compliance.

This verification report is intended to satisfy Condition 7b of Planning Permission 137079/JO/2023 (a variation of 133143/VO/2022).

As part of the remediation works, excavated materials were re-used in line with a DoWCoP Materials Management Plan, referenced Victoria North Infrastructure Work. The Declaration submitted to CL:AIRE is provided in Appendix A.

1.1.2 Proposed development

Following remediation of the site by BAM, including providing a geotechnically suitable development platform and permanent landscaping enhancements, MCC proposes to develop the site with residential properties and a school. The remediation strategy was designed to make the site suitable for these intended end uses.

1.1.3 Scope

Note that completion of the remediation is taken as the completion of the earthworks and infrastructure work and does not include the final development plans and build phase element, which will be covered as part of a separate planning application.

The remediation completed on site did not include actions relating to follow on development that were identified in the agreed Remediation Strategy. Actions that remain to be completed are:

- Provision of clean environmental cover system
- Installation of appropriate gas protection
- Installation of appropriate water supply pipework

A separate verification report will need to be prepared by the future developers of the site that confirms these measures have been implemented, in order to fully discharge Condition 7b of Planning Permission 137079/JO/2023.

This verification report does not consider the geotechnical engineering aspects of the earthworks, including laboratory analysis and in situ geotechnical analysis required in the Victoria North HIF Infrastructure & Enabling Works Specification for Highway Works - Civil Infrastructure [5], which will form a separate Geotechnical Addendum.

1.2 Site background

The Phase 1 site was formerly industrial land located to the north of Manchester city centre, approximately 600 m northeast of Manchester Victoria station. The approximate national grid reference for the centre of the site is SJ 84644 99630. The site layout and boundary are shown in Figure 1.

The site has been described in a number of previous assessments and reports as discussed below:

A preliminary ground investigation report (GIR) [6], which included a generic controlled waters risk assessment, was prepared using the results of the 2019 and 2021 AEG ground investigations (GI) [7][8]. The report used desk study information and ground investigation data to review the site history, uses of the site that might have caused ground contamination, the environmental sensitivity of the site and the risks that contaminants of concern might present to the development and to controlled waters. The preliminary GIR provided the first stage of assessment of contamination as required by the planning process.

A third phase of ground investigation was subsequently completed in 2022 at the site by BAM, which was reported in a BAM factual report [9]. The results of this investigation were used to prepare an updated version of the GIR [10], together with a detailed controlled waters risk assessment (DQRA) [11].

A draft conceptual site model report was subsequently produced which focused on emerging water that had been encountered during site clearance in early 2022 [12]. The conceptual site model was the subject of detailed discussions with the Environment Agency and Manchester City Council Environmental Health Department and informed further ground investigations, focused on per- and polyfluoroalkyl substances (PFAS). The results of this further ground investigation, together with a detailed quantitative assessment of risks from PFAS and other contaminants of concern, were presented in a PFAS human health risk assessment [13] and an updated detailed controlled waters DQRA produced by Arup [14], which was developed into a remediation strategy by LK Group [1] and RIP by Arup [2].

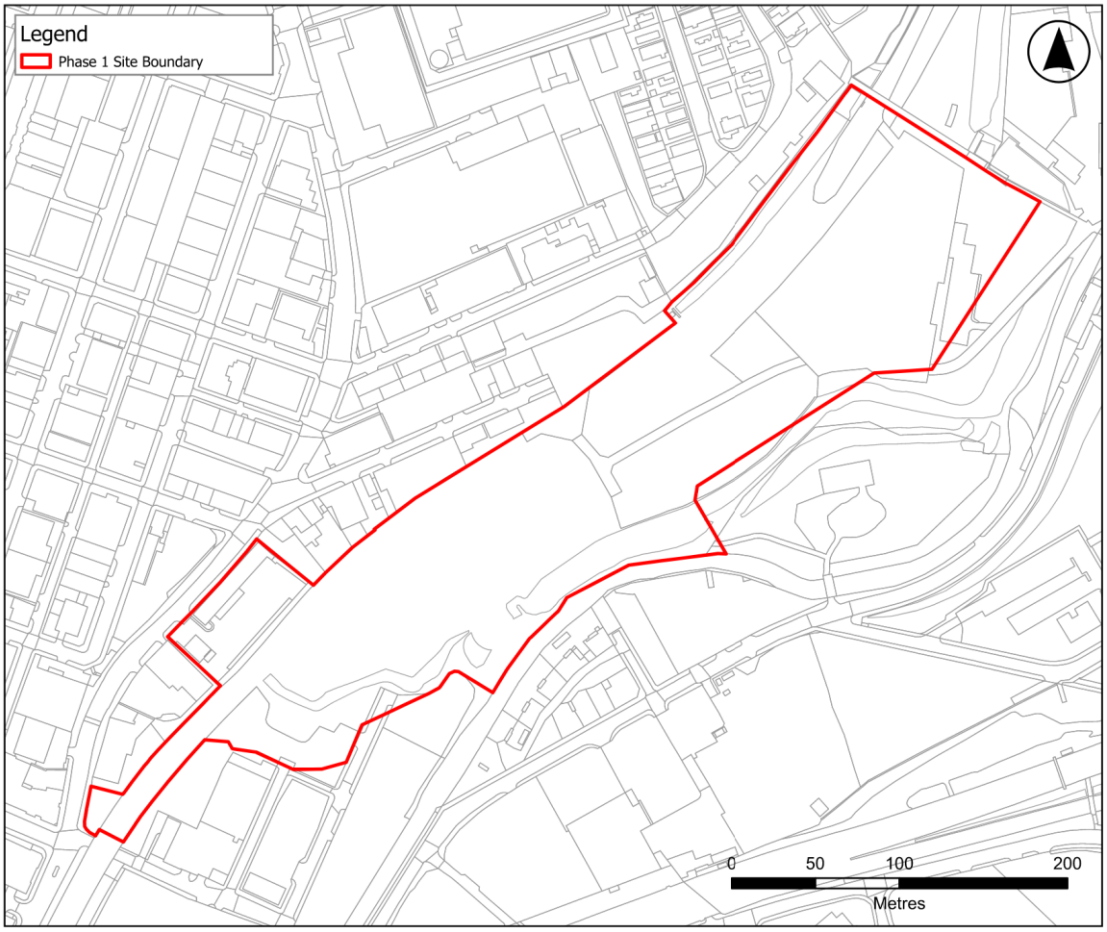


Figure 1. Site location

1.3 Remediation requirements

The overall objective of the remediation was to remediate contamination sources that have been demonstrated as posing potential risks to human health and/or controlled waters. The agreed RIP identified a number of remediation areas within the site, required primarily to protect controlled waters. Risks to human health were to be addressed during phases of post-remediation development, for example through the provision of clean cover soils in areas of soft landscaping.

Works to address the relevant source-pathway-target linkages at the site were undertaken in accordance with the LK Group Remediation Strategy. The remediation works addressed in the remediation strategy can be summarised as follows:

- Vegetation clearance across development areas, including treatment of invasive species (Japanese knotweed and Himalayan balsam)
- Removal of historic structures from the site (e.g. former building floor slabs, areas of former external hardstanding, lighting tower bases, turntables, etc.)
- Remediate contaminated materials in the area of the former gasworks
- Remediate contaminated materials in the area of TP422/TP423
- Remediate contaminated materials in the former carriage shed area
- Remediate contaminated material in TP405a at 2 m
- Complete earthworks across site
- Hydroseeding of all exposed made ground remaining on completion of the Phase 1 works

1.4 Verification requirements

The general and geoenvironmental verification requirements for the remediation, as set out in the RIP, were as follows:

- A description of the works.
- A comprehensive photographic record of the works.
- Locations of exploratory holes used to further delineate remediation areas.
- Locations of monitoring infrastructure.
    - Protected installations.
    - Decommissioned installations.
- As-built drawings, which demonstrate:
    - Existing utilities.
    - Utility diversions.
    - Redundant utilities abandoned by grouting.
    - Obstructions not removed during the works.
    - Finished ground levels.
    - Areas of cut and fill.
    - Cut and fill isopachytes.
    - Extent and depth of remediation excavations.
    - Locations of verification sampling.

    - Location of hydroseeded areas.
- Records of laboratory analysis results.
- A summary of the volumes of material excavated, processed and screened.
- Records of quantity and fill classes re-used and where each were placed.
- Comparison of geochemical verification testing with verification targets.
- Records of unexpected contamination encountered and the results of investigation, assessment and remediation.
- Records of disposal of perched water and any groundwater including volumes and test results.

Geotechnical requirements will be covered by the Geotechnical Addendum.

1.5 Technical notes

Supporting technical notes were produced by Arup during the remediation, to cover issues that were not foreseen in the Arup RIP and should be read in conjunction with the Arup RIP. The technical notes were issued to BAM for review and approval and, where necessary, to Regulators. The technical notes are included in Appendix B.

Table 1. Technical notes summary

Date	Technical note	Purpose	Status
30 January 2024 [3]	500 Series Ground Investigation Interpretation	Interpretation of the additional PFAS investigation and the implications for remediation	Issued to BAM
18 March 2024 [4]	Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria	Proposal to update the soil re-use targets to facilitate re-use of site-won materials across the plateau	Approved by EA

2. Summary of preliminary works

2.1 Overview

Preliminary works activities were undertaken from 2022 until July 2024.

Preliminary works included:

- Removal and disposal of fly-tipped materials from the surface of the site (Section 2.2).
- Vegetation clearance across the development areas, including treatment of invasive species (Section 2.3).
- Updating the topographic survey across the site (Section 2.4).
- Further delineation of remediation areas (Section 2.5).
- Protection/decommissioning of existing borehole installations (Section 2.6).
- Removal of areas of existing surface hardstanding and near-surface structures (Section 2.7).

2.2 Site clearance

Initial site clearance was undertaken prior to the issue of the RIP in October 2023. Fly-tipped material was removed and sent off-site for disposal. Asbestos surveys were undertaken of the entire Phase 1 area and identified asbestos-containing materials (ACM) were removed by Rhodar Industrial Services Ltd.

Utilities identification was undertaken and diverted where necessary. Protection was provided to live utilities that remain within the site.

Site clearance is summarised in Drawing VNIF-ARP-00-YYY-DR-G-0013.

2.3 Invasive species

Areas of invasive species, including Himalayan balsam and Japanese knotweed, were identified across the site. Invasive species were excavated between November 2023 and January 2024. Invasive species were removed from site and taken for disposal as outlined in Section 4.4.

Locations of the invasive species, methodology, and a summary and photographs of the removal works undertaken by LK Group are included in Appendix C.

2.4 Topographic survey

BAM undertook a topographic survey post-Phase 2 GI in September 2021; this provided baseline information to support the ongoing earthworks balance assessments for the site. The as-built model was frequently updated throughout the course of the preliminary and main works, with the final issue in August 2026.

2.5 Further ground investigation and delineation of remediation areas

Section 5.2 of the RIP proposed a programme of additional trial pitting to further delineate the following remediation areas:

- As required by the Environment Agency, a programme of trial pitting to identify whether PFAS was present in the gasworks remediation area.
- A programme of trial pitting with analysis primarily for PFAS compounds, to further delineate the TP422/TP423 remediation area.
- Further investigation adjacent to TP405A (excavated in March 2023), to validate the findings of previous laboratory PFAS analysis in a sample recovered from 2.0 m below ground level (mbgl).

A ground investigation comprising 15 trial pits and associated testing was carried out in November 2023. The works were supervised by BAM Ritchies with part-time site attendance by Arup. Precautions were taken to minimise the risk of PFAS cross-contamination as described in Appendix C of the RIP. The findings of the investigations were interpreted in the Arup (2024) 500 Series Ground Investigation Interpretation technical note [3].

2.5.1 Assessment of former gasworks area for PFAS

The November 2023 investigation identified no PFAS contamination in the former gasworks area. The contamination data from all phases of ground investigation at the site were used to identify the following requirements for remediation in the gasworks area, shown in Figure 2:

- Gasworks remediation area 1: No elevated concentrations of contaminants of concern were encountered in this area. Remedial works were therefore limited to the removal of the remains of the former gasworks sub-structure.
- Gasworks remediation area 2: The presence of contaminants of concern at elevated concentrations was demonstrated at shallow depth in this area of the former gasworks. Remedial excavations were therefore proposed to depths of 1.5 m.
- Gasworks remediation area 3: The presence of contaminants of concern at elevated concentrations was demonstrated at depths greater than 2.0 m in this area of the former gasworks. Remedial excavations were therefore proposed to depths of c. 3.0 m.

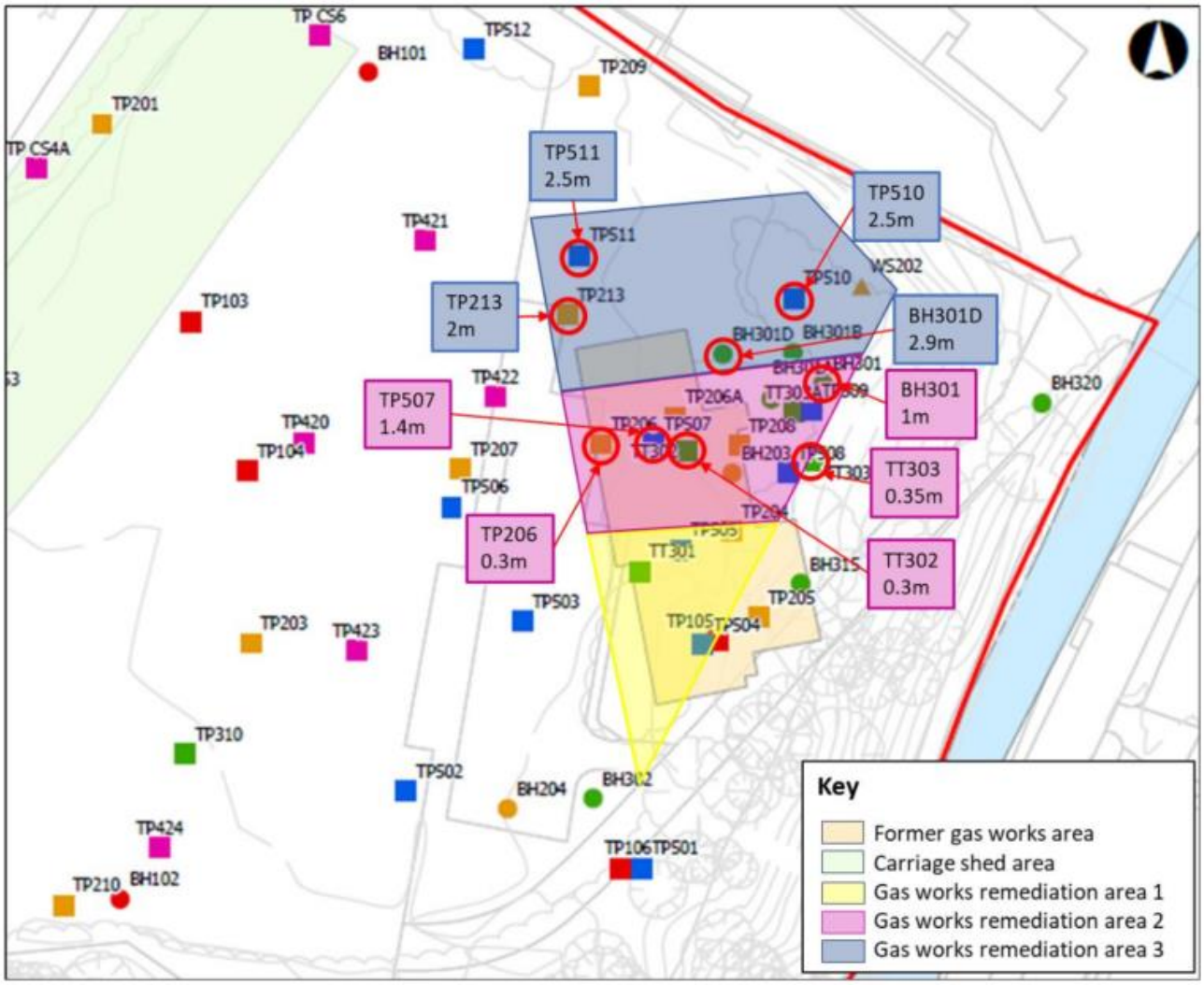


Figure 2. Remediation areas in the gasworks area [3]

2.5.2 Delineation of TP422/TP423 PFAS hotspot

The contamination data from all phases of investigation was combined and compared with the verification criteria set out in the RIP. Several samples exceeded the verification criteria and were used to identify the following requirements for remediation of the TP422/TP423 remediation area, shown in Figure 3:

- TP423 area: The presence of contaminants of concern at elevated concentrations was demonstrated at shallow depth in this area. Remedial excavations were proposed to depths of 0.5 m.
- TP422 area: The presence of contaminants of concern at elevated concentrations was demonstrated at greater depth in this area. Remedial excavations were proposed to depths of 2.5 m.

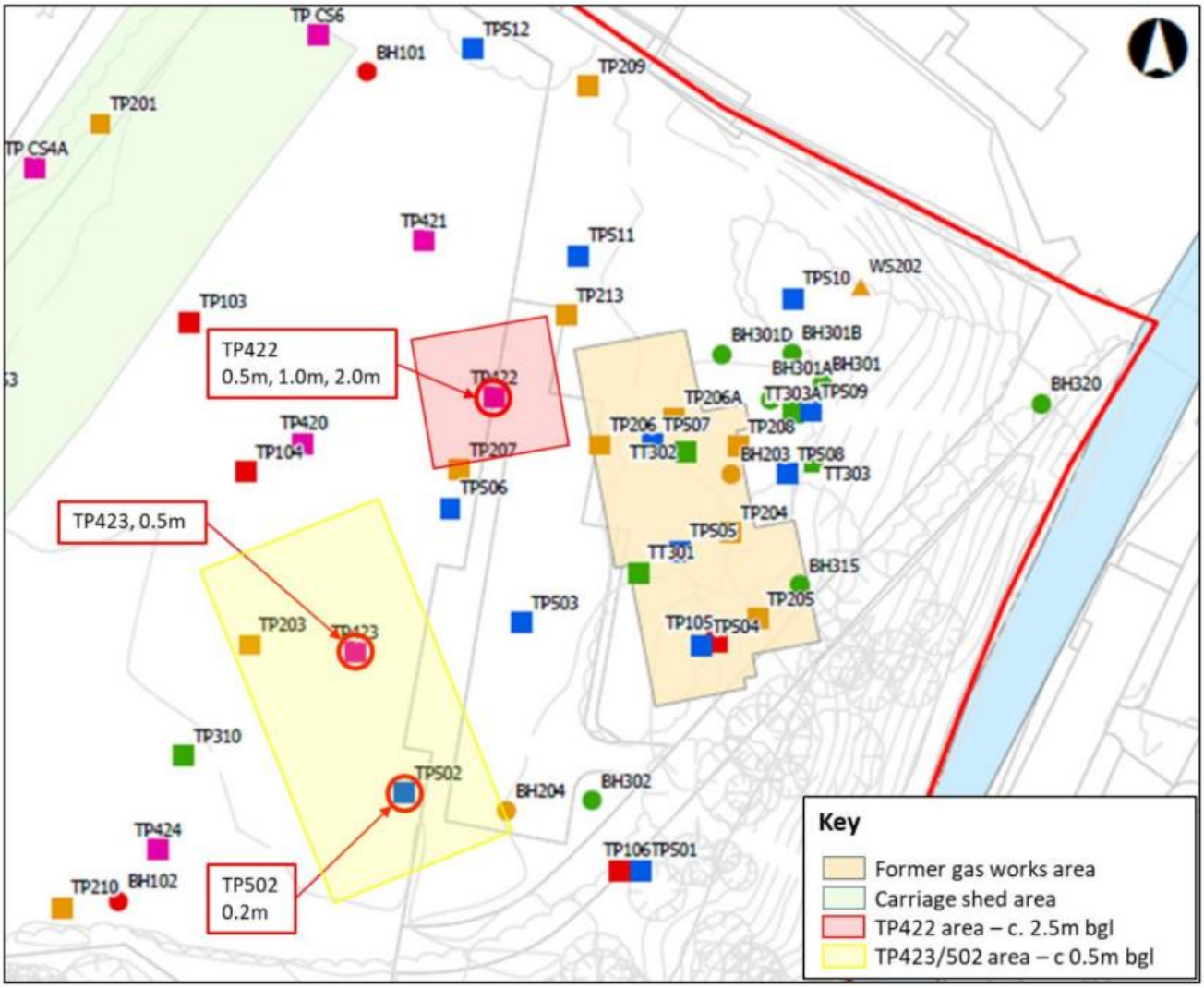


Figure 3. Remediation areas in the TP422/TP423 area [3]

2.5.3 Further assessment of TP405A

Although the agreed RIP identified a requirement for remediation of the TP405A area, the additional ground investigation demonstrated that any PFAS source in this area of the site was considered too small to present a risk to controlled waters. The technical note [3] concluded that there was no requirement for remediation in the vicinity of TP405A.

2.6 Borehole decommissioning

Boreholes were decommissioned between April and July 2024. Boreholes were decommissioned with a bentonite slurry prior to the completion of remedial works and excavation. Decommissioning records for each well can be found in Appendix C. See Drawing VNIF-ARP-00-YYY-DR-CE-0008 for decommissioned borehole locations.

2.7 Removal of surface and sub-surface obstructions and relic infrastructure

A turnover of existing soils to a depth of 0.5 m was undertaken across Red Bank Plateau and Red Bank Terrace. Any obstructions encountered were removed to a depth of 2.0 mbgl. The area of 0.5 m turnover and obstruction removal is shown in Drawing VNIF-ARP-00-YYY-DR-CE-0007.

Concrete and masonry were recovered from the breaking out of various infrastructure across the site including former railway turntables. These materials were crushed into 6F2. The materials were predominantly used in general fill to improve the performance of site-won soils, and in the treatment of soft spots. See Section 5 for analysis against the chemical re-use criteria.

Any obstructions deeper than 2.0 mbgl remained in situ. Piled foundations from the railway turntables remain below 2.0 mbgl. The location of these features is shown in Drawing VNIF-ARP-00-YYY-DR-G-0013.

The substructure of the former gasworks building and carriage shed foundations were broken out and disposed of off-site as per the RIP materials management strategies A and B (discussed in Section 4.2) for contaminated and suspected contaminated material.

2.8 Surface and perched water management

BAM holds a temporary trade effluent discharge consent (TWBAM05226323) for discharge to a combined sewer which crosses beneath the site. This consent is included in Appendix C.

A temporary water treatment system was installed to treat emerging water entering the northeast of the site. After treatment, analysis was undertaken against the requirements of the discharge consent, and the treated water was discharged to the sewer. Elements of the temporary treatment plant were relocated periodically to allow earthworks to be completed. On completion of the earthworks and remediation, the emerging water treatment plant is still operational and discharges to the sewer.

Localised pumping was required to remove perched water within substructures throughout the works. Samples of the perched water were sent for laboratory testing, with the results included in Appendix C. Pumped water (27,000 litres) was removed from site via road-going tanker to Harewood Whin Liquid Waste Treatment Plant.

2.9 Environmental monitoring

BAM have confirmed that environmental monitoring was undertaken in line with their management plans outlined in the RIP and included in Appendix C.

Monitoring included air quality monitoring from two on-site monitors throughout the works by SRL Technical Services Ltd (SRL), with additional air monitoring by Socotec Asbestos Ltd during asbestos removal works.

Noise monitoring was predominantly undertaken by BAM throughout the works, with additional noise monitoring by SRL for the temporary water treatment system.

3. Summary of main works

The main works were undertaken between January 2024 and April 2025.

3.1 Remediation areas

3.1.1 Former gasworks area

Gasworks remediation areas 2 and 3 were excavated to at least 3.0 m bgl as recommended in the 500 Series Ground Investigation Interpretation technical note. All substructures were removed from the former gasworks. Localised deeper excavations were undertaken to remove areas of deeper contamination that were encountered, to a maximum of 6.4 m below original ground level. The verification process is detailed in Section 6.1. All materials from gasworks remediation areas 2 and 3 were disposed of off-site as per materials management strategy A (Section 4.2). Exported materials are discussed in Section 4.4.

3.1.2 Carriage shed

An initial 500 mm of granular material was excavated from the surface of the carriage shed, and, with no visual or olfactory signs of contamination, was stockpiled for re-use testing. Below the initial 500 mm, the carriage shed substructure (brick) was excavated to approximately 2 m depth and any visually uncontaminated materials were stockpiled separately for re-use testing. The results of this re-use testing are summarised in Section 5.3.

Waste materials within the substructure and any of the brick that came into contact with perched groundwater within the substructure were segregated and removed as waste from site as per materials management strategy B (Section 4.2).

The verification process is detailed in Section 6.2.

3.1.3 TP422 and TP423

The TP422 hotspot was excavated to a depth of 2.5 m and the TP423 hotspot was excavated to a maximum depth of 1.0 m following the 500 Series Ground Investigation Interpretation technical note. The verification process is detailed in Section 6.3.

All materials from the TP422 and TP423 remediation areas were disposed of off-site as per materials management strategy A (Section 4.2).

3.2 Earthworks

A number of specific earthworks activities were required as part of the Phase 1 infrastructure works (Figure 4). These earthworks activities were not required to address contamination but were intended to adjust ground levels to suit the subsequent development of the site.

In addition to these specific earthworks activities, general regrading works were required across the remainder of Red Bank Plateau to achieve the proposed development levels.

All soils excavated as part of the general earthworks operations were managed under a Materials Management Plan (MMP) prepared in line with CL:AIRE DoWCoP with the aim of re-using materials on site where possible and minimising off-site disposal.

See Section 5 for the geoenvironmental suitability for re-use.

The discovery strategy described in the RIP to manage unexpected contamination was implemented across the works. No visual or olfactory evidence of contamination outside of the remediation areas was noted.

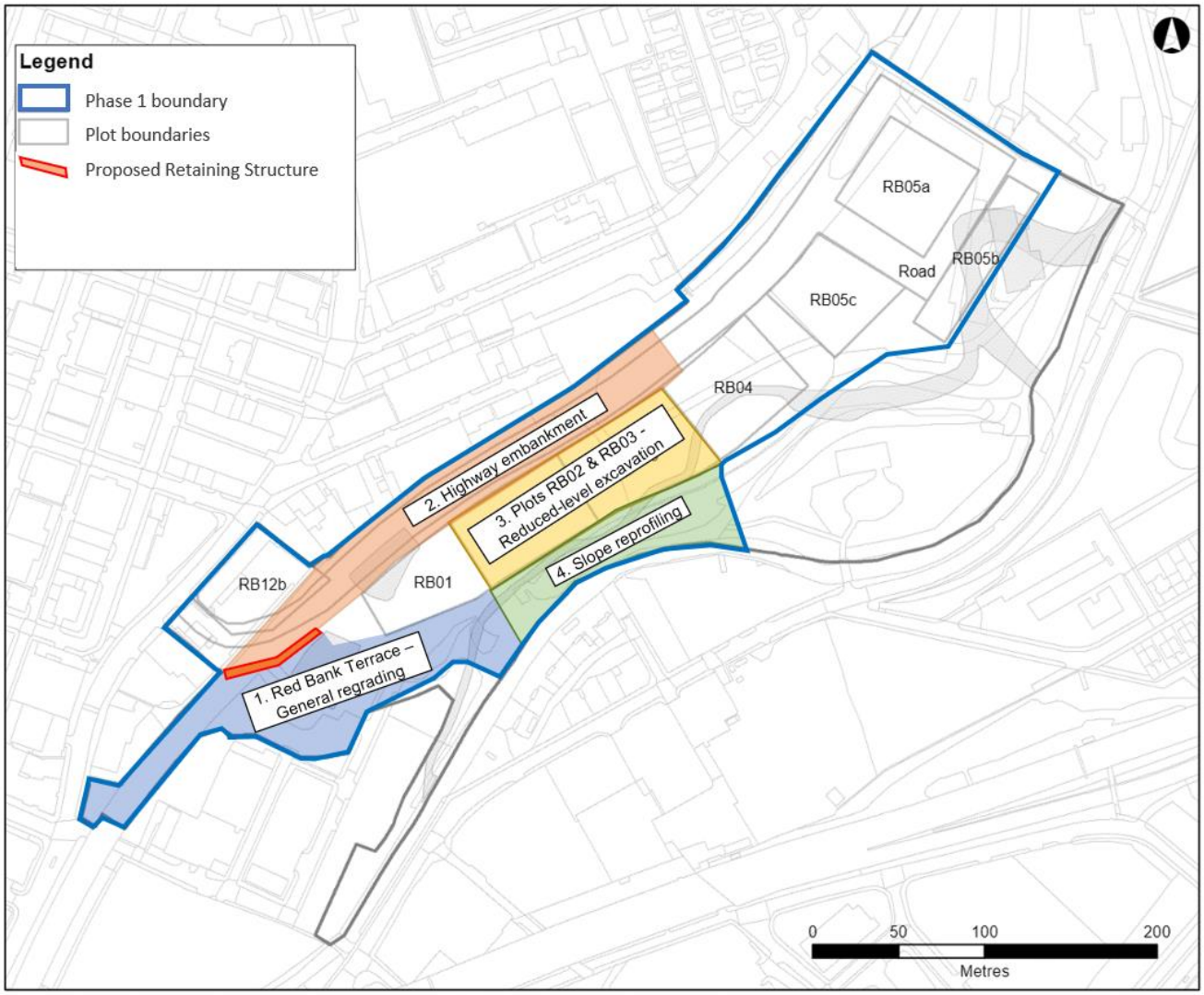


Figure 4. Summary of Phase 1 earthworks areas

3.2.1 General site regrading to achieve proposed finished ground levels

Red Bank Terrace was regraded to facilitate the future provision of pedestrian footpaths and cycleways. As materials were locally redistributed, re-use testing was not required by the agreed remediation strategy.

3.2.2 Highway embankment

A road (referred to as Plateau Road) was constructed to allow access to the site from Red Bank. Materials were re-used from RB02, RB03, the river slope re-profiling, and crushed masonry. The suitability of re-used material is discussed in Section 5.

Additional 6F2 and 1A fill were imported, as documented in Section 4.3.

A retaining wall was installed above Red Bank Terrace and backfilled with imported 6N.

3.2.3 Plot RB02/03 reduced level excavation

Ground levels in plots RB02 and RB03 were reduced to 38.0 mOD. Excavated material was re-used as general fill along the highway embankment and in the carriage shed excavation. The suitability of re-used material is discussed in Section 5.

Although not originally specified, RB04, RB05a and RB05c were also excavated to improve geotechnical performance. This material was stockpiled, tested for suitability (Section 5), reinstated and compacted.

3.2.4 Regrading steep slopes

The existing steep slopes between plots RB02 and RB03 and the River Irk were reprofiled. Excavated material was re-used as general fill along the highway embankment, discussed in Section 5.

3.3 Hydroseeding

Hydroseeding was undertaken across all areas of made ground left exposed at the surface on completion of the earthworks and remediation. This was required in the RIP to provide a short-term barrier between residual contamination in made ground soils and unauthorised users of the site and will also reduce infiltration by promoting evapotranspiration. The extent of hydroseeding is shown in Drawing VNIF-ARP-00-YYY-DR-CE-0010.

3.4 Settlement monitoring

Two inclinometers and two extensometers were installed in June to July 2026. The locations of these installations are shown in Drawing VNIF-ARP-00-YYY-DR-CE-0030.

4. Materials management

4.1 Overview

Throughout the remediation works, materials were:

1. Recovered from site-won materials for re-use on site under an MMP;
2. Exported off-site for treatment or disposal;
3. Imported from off-site sources to fill remediation excavations.

A timeline of materials movement by month can be found in Appendix D. Photographs of the works can be found in Appendix E.

A total of 24,870 m^3 of material was re-used within the site. The MMP identified the requirement for 35,316 m^3 of material to create the required landform, of which 28,895 m^3 was expected to be suitable for re-use from site. For information, an error was included in the MMP Declaration (Appendix A) which stated the proposed volume as 353,163 m^3, rather than the correct proposed quantity 35,316 m^3.

The volume of material that was re-used was lower than expected due to the amount of contaminated material found, particularly in the gasworks and carriage shed, which was unsuitable for re-use under the agreed Remediation Strategy. As a result, 12,351 m^3 of non-waste materials had to be imported to create the required development platform levels. Details of imported materials are included in Section 4.3.

A total of 46,035 tonnes of waste was removed from site. Details of exported materials are included in Section 4.4.

The reinstatement location of placed site-won and imported materials is summarised in Table 2.

Table 2. Volumes and locations of materials placed on site

Reinstatement location	Material	Site-won (m^3)	Imported (m^3)
Gasworks and TP422/TP423 remedial areas	Site-won from RB05a	950	-
	Imported 2C	-	364.5
	Imported 1A limestone	-	7,983
	Imported 1A gritstone	-	353
Carriage shed remedial area	Site-won from RB02	3,050	-
	Site-won masonry	1,460	-
	Site-won from RB03	4,700	-
	Site-won from carriage shed	2,600	-
	Imported 2C	-	364.5
Plateau Road	Site-won from RB02	3,050	-
	Site-won from RB03	4,700	-
	Site-won from river embankment	3,000	-
	Imported 1A limestone	-	50
	Imported MOT Type 1 limestone	-	661
	Imported MOT Type 1 gritstone	-	101
	Imported 6F2	-	1,570

Reinstatement location	Material	Site-won (m^3)	Imported (m^3)
RB04, RB05a, RB05c	Site-won from RB04	360	-
	Site-won from RB05a	950	-
	Site-won from RB05c	50	-
Retaining wall	Imported 6N limestone	-	904
Totals		**24,870**	**12,351**

4.2 Recovered materials

To reflect the various scenarios that would occur during the remediation works, the RIP proposed the following material management strategies to segregate contaminated materials from materials suitable for re-use, to minimise off-site disposal:

4.2.1 Material management strategy A

Material management strategy A was relevant to contaminated material excavated from:

- Former gasworks area
- TP422/TP423 area
- Any areas of contaminated soil identified via the discovery strategy

Following further delineation of the gasworks as discussed in Section 2.5.1, no contaminants of concern were encountered in gasworks area 1 and remedial excavations were not required. Concrete and masonry materials removed during the turnover of gasworks area 1 were tested against the chemical re-use criteria, discussed in Section 5.

All material confirmed as contaminated following delineation and/or with visual or olfactory evidence of contamination was excavated and placed directly onto road-going transport or temporarily stockpiled prior to removal off-site for treatment/disposal.

Waste classification and Waste Acceptance Criteria (WAC) testing was undertaken on these materials to determine the appropriate waste disposal route. Waste carriers and operators of receiving sites are summarised in Section 4.4.

Once excavated to the required levels, verification testing was undertaken to confirm the successful remediation of contamination. This verification testing is described in Section 6.

4.2.2 Material management strategy B

Material management strategy B was relevant to suspected contaminated material from:

- The former carriage shed.

Material excavated from the former carriage shed was segregated as follows:

- Material with visual or olfactory evidence of contamination
- Saturated material that had been in contact with perched water within the carriage shed substructure
- All other material in the former carriage shed

The top 500 mm of material from the carriage shed (above the substructure) was excavated and segregated. The suitability of this material for potential re-use as earthworks fill on site was determined on both geoenvironmental and geotechnical criteria. Comparison against the chemical re-use criteria is discussed in Section 5.

Below the initial 500 mm, material was heterogeneous made ground including substructure masonry, granular material including ash, cohesive material and potentially fly-tipped material. Visible signs of contamination and perched groundwater were also encountered. These materials were tested to determine the appropriate waste disposal route and removed from site. The material remained in situ until it could be excavated and placed directly into road-going transport, thereby containing the potentially contaminated perched groundwater.

Once excavated to the required levels, verification testing was undertaken to confirm the successful remediation of contamination. This verification testing is described in Section 6.

4.2.3 Material management strategy C

This strategy is relevant to all excavated material not addressed by material management strategy A or B.

Material excavated generally across the site (i.e. outside any of the identified remediation areas) was segregated by area.

This material was sampled and assessed for potential re-use as earthworks fill on site. Suitability was determined on both geoenvironmental and geotechnical criteria. Comparison against the chemical re-use criteria is discussed in Section 5.

4.3 Imported materials

4.3.1 Primary aggregates

Materials were imported from external sources as new primary products. Validation testing was not required, as materials were imported as virgin aggregate products.

Imported primary products are outlined in Table 3. Source facility permits are summarised in Table 4. Details of each ticket can be found in Appendix F.

Table 3. Summary of imported materials

Material imported	Supplier	Destination	Tonnage
Class 1A limestone	Marshalls, Fletcher Bank Quarry	Gasworks/TP422/TP423, Plateau Road	12,853
Class 1A gritstone	Whitworth Quarry	Gasworks/TP422/TP423	565
Class 2C fill	Ruttle Plant Holdings Limited	Gasworks/TP422/TP423, carriage shed	1,240
Class 6N limestone	CEMEX UK Materials Limited	Retaining wall	1,717
MOT Type 1 limestone	CEMEX UK Materials Limited	Plateau Road	1,058
MOT Type 1 gritstone	Whitworth Quarry	Plateau Road	161
20/40mm Clean Gritstone	Whitworth Quarry	Temporary usage - drainage and maintenance	197

Table 4. Summary of import provider

Import provider	Material	Permit	Validity (from – to)
Whitworth Quarry	MOT Type 1 gritstone, Class 1A gritstone, 20/40mm clean gritstone	EPR/LB3206CX	20/10/2011 – present

Import provider	Material	Permit	Validity (from – to)
Ruttle Plant Holdings Limited	Class 2C fill	EPR/FB3209TQ	01/06/2018 – present
CEMEX UK Materials Limited	MOT type 1 limestone, Class 6N limestone	EPR/XP3891EF/V003	26/07/2011 – present
Marshalls, Fletcher Bank Quarry	Class 1A limestone	EPR/GP3733FE	21/03/2011- present

4.3.2 WRAP Quality Protocol

Excess concrete and brickwork at the adjacent Victoria North NT02 to NT04 development site was processed into 6F2 under the WRAP method statement produced by Provectus Remediation Ltd, in accordance with the WRAP Quality Protocol: Aggregates from inert waste [15]. Following recovery, 1570 m^3 of the resulting 6F2 was imported into the Phase 1 site. Once imported, the material was processed with Phase 1 site-won materials to improve the geotechnical performance of general fill at Plateau Road. The imported WRAP material was used as a direct substitute for quarried material, thereby reducing the quantity of virgin aggregate required on site.

The Provectus WRAP method statement, Provectus verification and all chemical results are available in Appendix G.

Additional chemical validation testing was not required where material was recovered in accordance with the WRAP protocol as per the RIP and specification.

4.4 Exported materials

Waste materials removed from site are outlined in Table 5. All exports were tracked as detailed in Appendix F. Copies of the relevant waste carriers' licenses and receiving facility permits are summarised in Table 6 and Table 7.

Table 5. Summary of disposal volumes

Material removed	Destination	Tonnage
Himalayan balsam contaminated soils	Harwood Quarry, BL2 4LT	5,213
Japanese knotweed contaminated soils	Fletcher Bank Quarry, BL0 0DD	2,260
Hazardous soils (total petroleum hydrocarbons (TPH))	Maw Green Soils Treatment Centre, CW1 5NG	29,803
Hazardous soils (TPH and asbestos)	Maw Green Soils Treatment Centre, CW1 5NG	1,365
Hazardous soil (PFAS)	Waste Recycling Group (Central) Ltd, B65 0JY	2,240
Hazardous soils (asbestos)	Cornets End Recycling Facility, CV7 7LH	222
Hazardous soils (metals)	Maw Green Soils Treatment Centre, CW1 5NG	329
Hazardous soils with mixed waste	Horseley Field WTF, WV1 3DW	3,374
Non-hazardous soils	Ruttle Plant, PR7 1NR	190
Non-hazardous soils with mixed waste	Horseley Field WTF, WV1 3DW	841
Oily water	Harewood Whin Liquid Waste Treatment Plant, YO23 3RR	27
Tarmac	Northbank Aggregate & Soil Recycling Facility, M40 5AA	171

Table 6. Summary of waste carriers for exported materials

Haulier	Waste carrier licence number	Expires
Roy Braidwood & Sons Transport Ltd	CBDU91464	23/03/2025
W Maher and Sons Ltd	CBDU90617	25/03/2025
Octane Holding Group Limited	CBDU163736	12/04/2026
Hargreaves (UK) Services Ltd	CBDU69509	24/11/2024
Cornthwaite Tree Care Limited	CBDU301186	09/08/2025

Table 7. Summary of receiving facilities and permits

Disposal facility	Operator	Waste	EWC code	Environmental permit number/waste exemption number
Harwood Quarry, BL2 4LT	Booth Ventures Limited	Himalayan balsam contaminated soils	17 05 04	EPR/BV8741IL
Fletcher Bank Quarry, BL0 0DD	Churchill Enviro Limited	Knotweed contaminated soils	17 05 04	EPR/GP3733FE
Maw Green Soils Treatment Centre, CW1 5NG	3C Waste Limited	Hazardous soils (TPH)	17 05 03*	EPR/BS7722ID
Cornets End Recycling Facility, CV7 7LH	NRS Meriden Aggregates Ltd	Asbestos-containing soils	17 05 03*	EPR/HB3802HF
Ruttle Plant, PR7 1NR	Ruttle Plant Holdings Limited	Non-hazardous soils	17 05 04	EPR/FB3209TQ
Horseley Field WTF, WV1 3DW	Dunton Environmental Limited	Hazardous soils with mixed waste	19 12 11*	EPR/BP3331DD
Northbank Aggregate & Soil Recycling Facility, M40 5AA	PR Junior Ltd	Tarmac	17 03 02	EPR/JB3403XQ
Harewood Whin Liquid Waste Treatment Plant, YO23 3RR	Acumen Waste Services Limited	Oily water	13 05 07*	EPR/WP3637JW

4.5 Stockpiling area

Excavated materials were managed by placing them to form a series of stable stockpiles, predominantly in the northern extent of the site between the carriage shed and gasworks and in RB04. A no-stockpile zone was observed to ensure stockpiles were located a suitable distance from the River Irk. Slope stability was also considered as stockpiled materials were not placed within 15 m of the upper crest of the regraded slope. The no-stockpile zone is shown in Drawing VNIF-ARP-00-YYY-DR-CE-0011.

Stockpiled material was segregated by type and source, with the source of each stockpile recorded. The suitability of stockpiled materials for potential re-use on site was tested against geoenvironmental and

geotechnical criteria, and waste classification criteria where unsuitable for re-use. Comparison against the chemical re-use criteria is discussed in Section 5.

Stockpiles were shaped and constructed to minimise rainfall infiltration.

Excavated materials from the remediation areas were placed onto tarps. Visibly contaminated materials such as from the gasworks were placed directly onto road-going transport.

5. Re-use of recovered materials

5.1 Amendments to the soil re-use criteria

Initial testing of materials showed widespread exceedances of the re-use criteria specified in the RIP. On inspection, it appeared there was a transcription error in the remedial targets from the Remediation Strategy DQRA. As such, the re-use criteria in the RIP and Earthworks Specification were overly conservative for re-use on the plateau. New re-use criteria were derived and included in an Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria technical note. This was reviewed and approved by the Environment Agency. A summary of these changes is included in Table 8.

As such, where benzo(a)pyrene, fluoranthene and anthracene also feature in the verification suites for remediation areas including the gasworks and carriage shed (see Section 6), the values for these contaminants were updated to reflect the updated re-use criteria and distance from the River Irk.

Table 8. Summary of re-use criteria updates

Contaminant	Re-use criteria specified in Earthworks Specification (mg/kg)	Revised re-use criteria specified in Addendum to RIP (mg/kg)
Nickel	27	56
Zinc	191	2690
TPH C8-C35	1000*	1000*
Fluoranthene	7	120
Anthracene	1.8	31
Benzo(a)pyrene	3.6	26
Perfluorooctanesulfonic acid (PFOS)	<0.002	<0.002
Perfluorooctanoic acid (PFOA)	<0.001	<0.001
* Where exceedances were noted, the risk-derived criteria for individual carbon bands detailed in Table 18 were applied.		

5.2 Re-use testing method

Site-won materials were tested against the re-use criteria specified in the RIP and Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria technical note.

General fill materials were obtained from the reduced level excavations of RB02 and RB03, the carriage shed, and the regrade of steep slopes (river embankment). These were predominantly used to backfill the carriage shed and at Plateau Road. General fill materials were also obtained from RB04, RB05a, and RB05c during a turnover of these plots for compaction purposes; these materials were stockpiled, tested against the re-use criteria, then used to refill the areas they were obtained from. 6F2 was obtained from the breaking out of various infrastructure around the site including the carriage shed and turntables, and blended with site-won soils in the carriage shed to improve geotechnical performance.

Materials were segregated by area of origin and sampled at a frequency of at least one sample per 500 m^3 as per the RIP.

Table 9 identifies the number of samples tested from each area of origin.

Table 9. Geoenvironmental sampling summary

Area of origin	Material	Number of samples	Reinstatement location	Volume re-used	Sample references
RB02	General fill	23	Plateau Road and carriage shed	6,100 m^3	RB02 A-H 001-003
RB03	General fill	23	Plateau Road and carriage shed	9,400 m^3	RB03 A-H 001-003
RB04 (excluding carriage shed)	General fill	4	RB04, RB05a, RB05c	360 m^3	RB04 A-C 001-002
RB05a (excluding carriage shed)	General fill	15	RB05a and gasworks	1,900 m^3	RB05a A-B and D-F and S 001-004
RB05c (excluding carriage shed)	General fill	3	RB04, RB05a, RB05c	50 m^3	RB05-Ash-001 to 003
Carriage shed	General fill	11	Carriage shed, most blended with imported and site-won crushed material	2,600 m^3	CS A-H 001, RB05aC, RB05cA CS A-H 001-C-ZN
River embankment	General fill	6	Plateau Road	3,000 m^3	RB02+RB03 EMBANKMENT 001-004, RB02SPA 001-002
Masonry (turntables and substructures)	Crush	5	Carriage shed	1,460 m^3	GWBricks, CSBricks, SPBricks, GWA1-SF2-001 and -002

5.3 Re-use testing results

See Table 10 to Table 17 for the results of analysis against the re-use criteria, segregated by area of origin. The re-used materials met the required re-use criteria with a small number of exceptions, discussed in Section 5.4. The full results spreadsheets and chemical laboratory certificates are presented in Appendix H.

Table 10. Re-use criteria data summary for RB02

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	23	43	67*
Zinc	2690	23	233	510
TPH C8-C35	1000	23	234	583
Fluoranthene	120	23	2	5.48
Anthracene	31	23	0.2	0.76
Benzo(a)pyrene	26	23	0.6	1.59
PFOS	<0.002	23	-	<0.001

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
PFOA	<0.001	23	-	<0.001
* Exceedances discussed in Section 5.4.				

Table 11. Re-use criteria data summary for RB03

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	23	38	50
Zinc	2690	23	288	642
TPH C8-C35	1000	23	366	825
Fluoranthene	120	23	4	9.09
Anthracene	31	23	1	1.98
Benzo(a)pyrene	26	23	2	3.26
PFOS	<0.002	23	-	<0.001
PFOA	<0.001	23	-	<0.001
A single sample (RB03F-001-G) exceeded the re-use criteria for TPH and showed visible and olfactory signs of contamination. As these samples had been taken from in situ locations prior to excavation from RB03, the material surrounding this sample point was segregated and disposed of off-site.				

Table 12. Re-use criteria data summary for RB04

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	4	61*	56
Zinc	2690	4	571	476
TPH C8-C35	1000	4	604	585
Fluoranthene	120	4	21	20.4
Anthracene	31	4	3	3.24
Benzo(a)pyrene	26	4	9	8.68
PFOS	<0.002	4	-	<0.001
PFOA	<0.001	4	-	<0.001
* The 95% UCL exceeds the re-use criteria, however the maximum concentration encountered on site does not exceed the re-use criteria.				

Table 13. Re-use criteria data summary for RB05a

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	15	39	61*
Zinc	2690	15	240	409
TPH C8-C35	1000	15	1054	1750*
Fluoranthene	120	15	6	12.4
Anthracene	31	15	1	1.49
Benzo(a)pyrene	26	15	4	7.17
PFOS	<0.002	15	-	<0.001
PFOA	<0.001	15	-	<0.001
* Exceedances discussed in Section 5.4.				

Table 14. Re-use criteria data summary for RB05c

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel *	56	-	-	-
Zinc	2690	3	434	349
TPH C8-C35	1000	3	665	482
Fluoranthene	120	3	12	7.2
Anthracene	31	3	2	1.2
Benzo(a)pyrene	26	3	5	2.8
PFOS	<0.002	3	-	<0.001
PFOA	<0.001	3	-	<0.001
* Analysis results for nickel not available.				

Table 15. Re-use criteria data summary for the carriage shed

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	19	31	34
Zinc	2690	19	253	324
TPH C8-C35	1000	12	1204	1470*
Fluoranthene	120	12	12	13.60
Anthracene	31	12	2	2.14
Benzo(a)pyrene	26	12	4	4.01

PFOS	<0.002	11	-	<0.001
PFOA	<0.001	11	-	<0.001
* Exceedances discussed in Section 5.4.				

Table 16. Re-use criteria data summary for the river embankment

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	6	44	47
Zinc	2690	6	1130	1230
TPH C8-C35	1000	6	405	464
Fluoranthene	120	6	4	5.23
Anthracene	31	6	1	0.65
Benzo(a)pyrene	26	6	2	1.6
PFOS	<0.002	6	-	<0.001
PFOA	<0.001	6	-	<0.001

Table 17. Re-use criteria data summary for the crushed masonry

Parameter	Re-use criteria (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Nickel	56	7	20	20
Zinc	2690	7	203	306
TPH C8-C35	1000	7	1128	1270*
Fluoranthene	120	7	7	9.3
Anthracene	31	7	2	2.26
Benzo(a)pyrene	26	7	3	4.44
PFOS	<0.002	5	-	<0.001
PFOA	<0.001	5	-	<0.001
* Exceedances discussed in Section 5.4. A single sample (GWA1-SF2-003) exceeded the re-use criteria for TPH and banded TPH. The material represented by this sample was segregated and disposed of off-site.				

5.4 Exceedances of re-use criteria

5.4.1 Nickel

Three samples exceeded the re-use criteria for nickel at RB02, with a maximum of 67 mg/kg, and two samples exceeded for nickel at RB05a, with a maximum of 61 mg/kg. Using the 95% upper confidence limit (UCL) of the true population mean as metric for comparison with the re-use criteria inherently accepts that some samples may exhibit exceedances of the criteria, which is often inevitable for chemically heterogenous

made ground. The 95% UCLs for nickel in RB02 (43.11 mg/kg) and RB05a (39.1 mg/kg) do not exceed the re-use criteria of 56 mg/kg.

Analysis of nickel was inadvertently omitted on three samples from RB05c. These samples were not subsequently re-tested; however, all other contaminants analysed in these samples were below the relevant criteria. Nickel has been considered based on the available results from the whole site, comprising 87 samples, which indicate that the dataset as a whole is consistent with the re-use criteria.

5.4.2 TPH

The re-use criteria for TPH C8-C35 of 1000 mg/kg was exceeded in 10 samples. In these instances, the RIP specified that samples were to be further quantified against individual TPH bands.

The banded results represent mixed aromatic and aliphatic data; however, the re-use criteria obtained from the specification are for the more conservative aromatic bands and are therefore a worst-case scenario. Two samples did not meet the re-use criteria for each carbon band and were segregated and removed from site. The remaining eight samples (in Table 18) were below the re-use criteria for each carbon band and therefore met the required re-use criteria.

Table 18. Samples exceeding initial TPH re-use criteria

Parameter	Total TPH (mg/kg)	>C8-C10 (mg/kg)	>C10-C12 (mg/kg)	>C12-C16 (mg/kg)	>C16-C21 (mg/kg)	>C21-C40 (mg/kg)
Re-use criteria	**-**	**153**	**76**	**208**	**323**	**2453**
RB05aA-001-G (RB05a)	1640	<1	2	16	112	1510
RB05aB-001-C (RB05a)	1750	<1	5	27	139	1580
CSB-001-G (carriage shed)	1100	2	4	29	165	903
CSC-001-C (carriage shed)	1130	2	4	29	126	966
CSF-001-G (carriage shed)	1140	1	4	36	180	921
CSH-001-G (carriage shed)	1460	2	5	50	235	1170
SPBricks (general masonry)	1010	4	27	<2	3	96
GWA1-SF2-002 (gasworks area 1 masonry)	1280	<1	3	34	168	1070

5.5 Geoenvironmental summary of re-used materials

The testing of re-used materials demonstrates that they are compliant with the geoenvironmental re-use criteria stipulated in the RIP and the Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria technical note. Therefore, the objectives of the Remediation Strategy have been met in this regard.

It should be noted that the Remediation Strategy assumes a 600 mm clean cover layer will be placed by the future developer in areas where soil may be exposed at ground surface. This remediation measure does not form part of the scope of this verification report and will need to be included in the verification report for the final development. Production of the future verification report will be the responsibility of the developer.

6. Verification of remedial excavations

6.1 Gasworks remediation area

TPH, polycyclic aromatic hydrocarbons (PAH) and ammoniacal nitrogen as N impacted ground was identified in the former gasworks area during previous ground investigations. Additional benzene, toluene, ethylbenzene and xylene (BTEX) and other volatile organic compounds (VOC) contamination was identified during the delineation of the remedial area during preliminary works (Section 2.5). The minimum excavation depths recommended in the Arup RIP and 500 Series Ground Investigation Interpretation technical note were:

- Gasworks remediation area 1: removal of the remains of the former gasworks sub-structure.
- Gasworks remediation area 2: proposed to depths of 1.5 m.
- Gasworks remediation area 3: proposed to depths of c. 3.0 m.

6.1.1 Pre-verification to determine gasworks extent

The RIP and 500 Series Ground Investigation Interpretation technical note assumed the eastern limit of the gasworks remediation area to be defined by the top of the existing wooded slope. Pre-excavation verification testing was undertaken around the edges of the gasworks and along the top of the slope, to ascertain whether contamination extended beyond the gasworks footprint and down the slope where it would be necessary to remove trees to extend the excavation. The location of these points is shown in Figure 5. The results of these pre-excavation samples were below the verification criteria, as summarised in Table 19 and shown in full in Appendix I. As such, the top of the existing slope was taken to be the eastern extent of the gasworks.

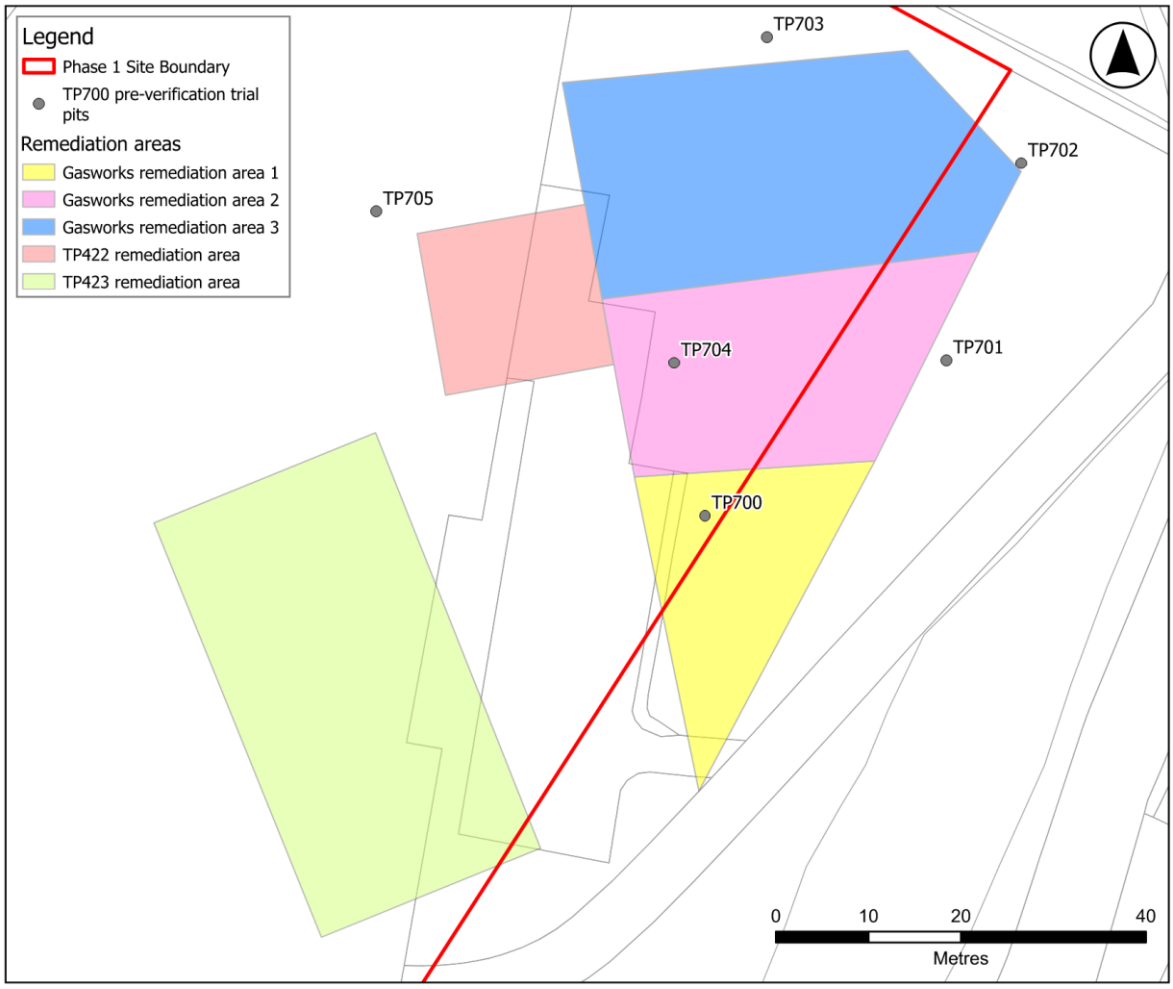


Figure 5. Pre-verification samples of the gasworks edge

Table 19. Pre-verification testing along the edge of the gasworks

Parameter	Verification target (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Ammoniacal nitrogen as N	4.5	6	2	1.4
Anthracene	31	6	3	2.8
Benzo(a)pyrene	26	6	13	18.9
Fluoranthene	120	6	15	14.9
Ethylbenzene	4.54	6	-	<0.001
o-Xylene	6.5	6	-	<0.001
Isopropylbenzene	0.58	6	-	<0.001
n-Propylbenzene	0.62	6	-	<0.001
1,3,5-Trimethylbenzene	1.33	6	-	<0.001
1,2,4-Trimethylbenzene	0.72	6	-	<0.001
4-Isopropyltoluene	98.5	6	-	<0.001
n-Butylbenzene	12.1	6	-	<0.001
2-Methylnaphthalene	7.33	6	6	6.3
TPH total (>C6-C40)	1000*	6	1415	1680*
TPH band testing undertaken on samples exceeding initial TPH target*				
Parameter	**Verification target (mg/kg)**	**Number of samples**	**95% UCL (mg/kg)**	**Max (mg/kg)**
>C8-C10	153	2	9	3
>C10-C12	76	2	18	6
>C12-C16	208	2	193	64
>C16-C21	323	2	934	296
>C21-C40	2453	2	2188	1310
* In line with the RIP, two samples that exceeded 1000 mg/kg of total TPH were further quantified against TPH bands. These samples did not exceed individual carbon bands.				

6.1.2 Gasworks obstructions and contamination

Upon excavation in gasworks remediation area 3, a brick-lined chamber, backfilled with brick and timber and with a strong hydrocarbon smell, was discovered (Figure 6). A concrete slab covered the chamber and upon further excavation a further chamber was uncovered, connected via an archway.



Figure 6. Brick-lined chamber during initial excavation

The chambers were emptied (Figure 7), dewatered, excavated, and segregated for removal. The material was removed from site in July 2024 (Figure 8).



Figure 7. Excavation of second chamber following removal of timber and brick debris



Figure 8. Gasworks area 3 following removal of chambers structure

In gasworks remediation areas 1 and 2, a brick wall with pipe, and a concrete slab were encountered along the tree line (Figure 9). The concrete slab sat at a depth of approximately 2 mbgl. Contamination was observed including iridescent sheen and a strong hydrocarbon smell. The obstructions were excavated and segregated for removal in December 2024.



Figure 9. Masonry wall at gasworks remediation area 1 and 2

The locations of these features are shown in Figure 10.

In a previous GI, a concrete slab was encountered in trial trench TT302 which was assumed to be the floor slab of the former gasworks main building. TT302 was terminated at the slab. It is likely this slab was covering the brick-lined chambers.

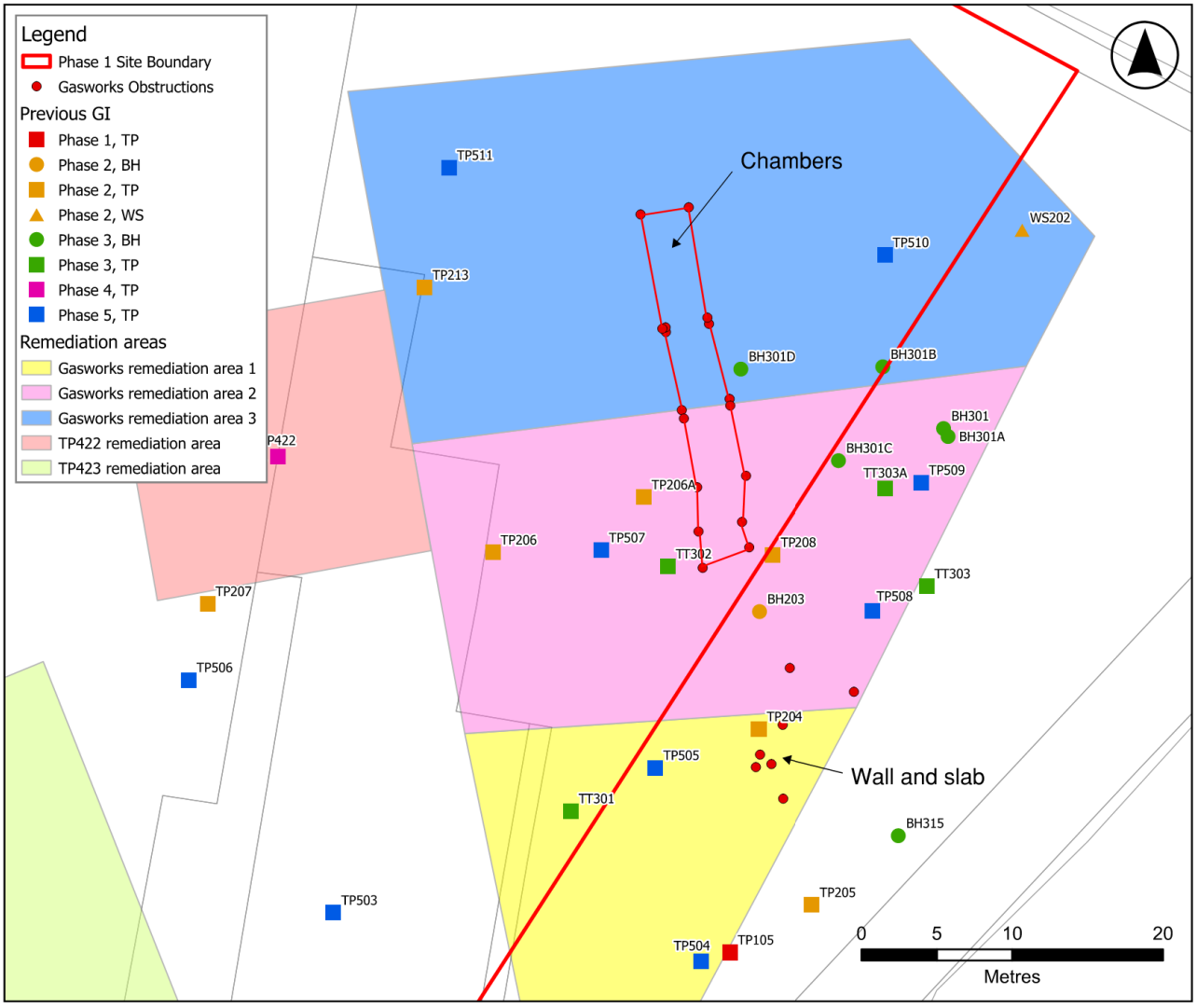


Figure 10. Obstructions observed in the gasworks remediation areas compared to previous GI locations

Verification testing was undertaken behind and below these features to validate the removal of any associated contamination. The results of the gasworks verification are discussed in Sections 6.1.4 and 6.1.5.

6.1.3 Asbestos

During the excavation of the chambers, material deemed for off-site disposal was stockpiled in gasworks area 2. As this stockpiled material was being transferred into wagons for removal off-site, suspected ACM was identified beneath the stockpile. This area was fenced off and covered, with works stopping in the gasworks area.

Socotec completed asbestos testing of the stockpile, surface, and a series of trial pits and trenches to confirm the suspected ACM and extent of ACM contamination. The report is included in Appendix J and a schematic of ACM finds is shown in Figure 11.

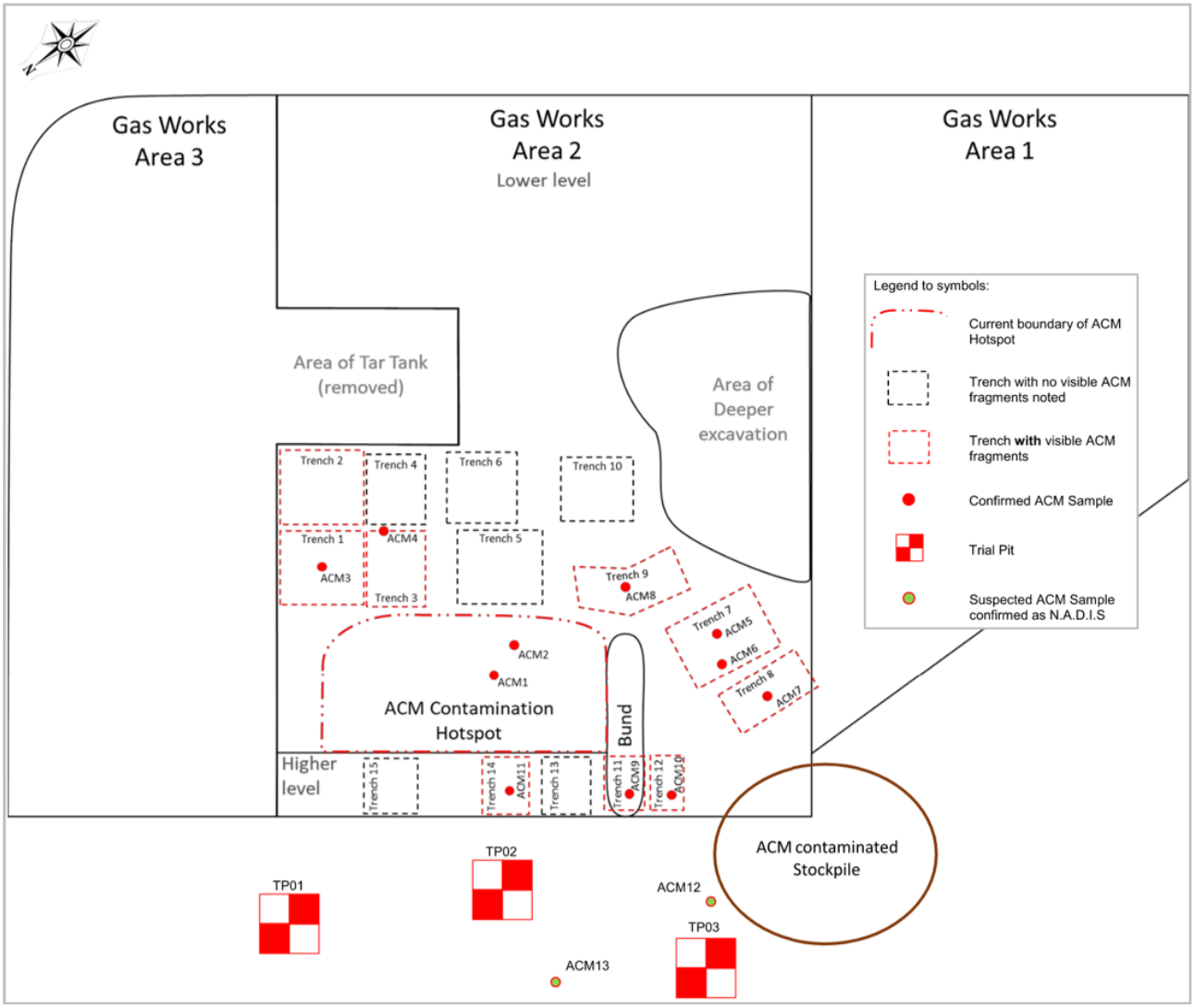


Figure 11. Schematic of identified ACM (extract from Socotec NOR4025/001/SC Rev00)

The asbestos was removed from site in September 2024 by asbestos abatement specialists, LAR Ltd.

6.1.4 Gasworks area 3 verification

Following the removal of obstructions and visual and olfactory signs of contamination, gasworks area 3 was initially excavated to 3.0 mbgl as proposed. Verification samples were taken from the base and walls of the excavation across a 15 m x 15 m grid, with grid squares labelled GWVE 1 to 9 and GWVE 12 to 16. Verification samples were formed of a composite of three samples from each grid square.

Initial exceedances of ammoniacal nitrogen and/or TPH were found in grid squares 5, 6, 9, 13, 14 and 15. To establish the depth/width of additional excavation required, three trial pits were conducted within each exceeding grid square, with samples collected at 0.5 m (3.5 m below original ground level, or 0.5 m into the wall for wall grid squares) and 1 m (4 m below original ground level, or 1 m into the wall). Composite samples were formed from the three trial pits per grid square at each depth.

The results of the initial exceedances, trial pit samples, and further action that was undertaken are discussed in Table 20. In grid squares 5, 6, 9, 14 and 15 a further 0.5 m excavation was implemented (deeper if base or wider if wall), and in grid square 13 a further 1 m excavation was implemented. Figure 12 summarises the ultimate depth of each grid square.

Table 20. Additional excavations undertaken in gasworks area 3

Grid square	Initial exceedances at 3 mbgl	Analysis of composite samples from trial pits undertaken in excavation base at 3 mbgl	Action taken following trial pitting
5 (base)	Ammoniacal nitrogen at 3 mbgl was 10.2 mg/kg	Ammoniacal nitrogen at 3.5 mbgl decreased to an average of 5 mg/kg. Whilst 5 mg/kg is still above the target of 4.5 mg/kg, concentrations began to increase again with depth.	Grid square deepened by 0.5 m to 3.5 mbgl
6 (wall)	Ammoniacal nitrogen at 3 mbgl was 25.1 mg/kg	Ammoniacal nitrogen 0.5 m into the wall decreased to an average of 0.7 mg/kg.	Grid square widened by 0.5 m
7 (base)	TPH at 3 mbgl was 8460 mg/kg	Trial pitting revealed a range of TPH concentrations ranging from <10 to 12,700 mg/kg (see Figure 13) and ammoniacal nitrogen concentrations ranging from 0.5 to 10.2 mg/kg (see Figure 14).	Series of excavations throughout grid square 7 (see Table 21)
9 (base)	Ammoniacal nitrogen at 3 mbgl was 5.6 mg/kg	Following trial pitting, ammoniacal nitrogen at 3.5 mbgl decreased to 2.4 mg/kg.	Grid square deepened by 0.5 m to 3.5 mbgl
13 (base)	Ammoniacal nitrogen at 3 mbgl was 7.1 mg/kg	Following trial pitting, ammoniacal nitrogen at 3.5 mbgl increased to 8.2 mg/kg and at 4 mbgl decreased to 4.6 mg/kg.	Grid square deepened by 1 m to 4 mbgl
14 (wall)	Ammoniacal nitrogen at 3 mbgl was 4.7 mg/kg	Following trial pitting, ammoniacal nitrogen at 0.5 m wider decreased to 2.2 mg/kg.	Grid square widened by 0.5 m
15 (base)	Ammoniacal nitrogen at 3 mbgl was 6.3 mg/kg	Following trial pitting, ammoniacal nitrogen at 3.5 mbgl decreased to 2.9 mg/kg.	Grid square deepened by 0.5 m to 3.5 mbgl

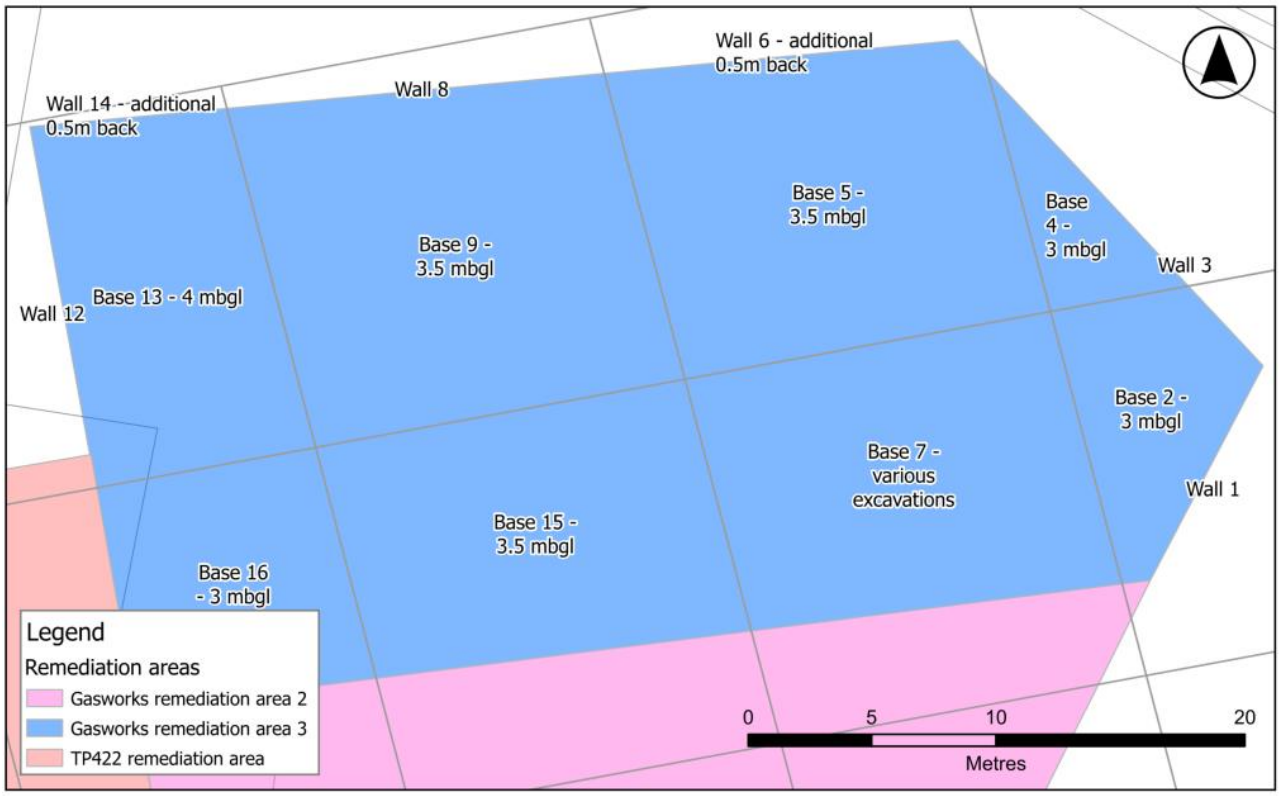


Figure 12. Final depths of excavation at gasworks remediation area 3

In grid square 7, a series of trial pits up to a maximum depth of 3.4 m (6.4 m below original ground level) were excavated to address TPH and ammoniacal nitrogen exceedances. All exceedances of TPH and ammoniacal nitrogen were excavated and removed from site, ensuring a qualifying concentration of each contaminant existed below each excavation. The results of trial pitting analysis are shown in Figure 13 and Figure 14 for TPH and ammoniacal nitrogen respectively, and additional excavation undertaken is detailed in Table 21.

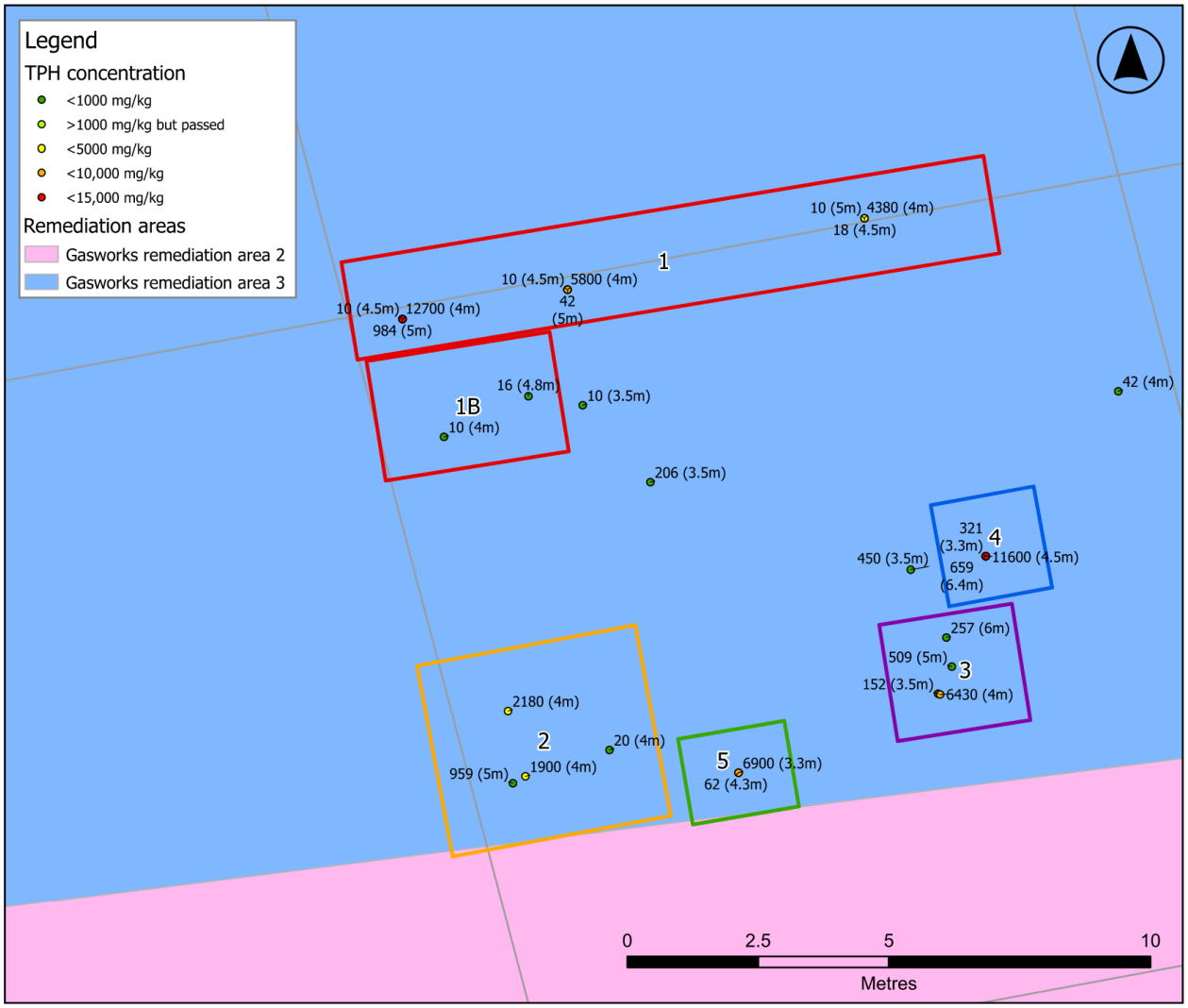


Figure 13. Delineation of TPH concentrations within grid square 7 (gasworks area 3) and remedial excavations

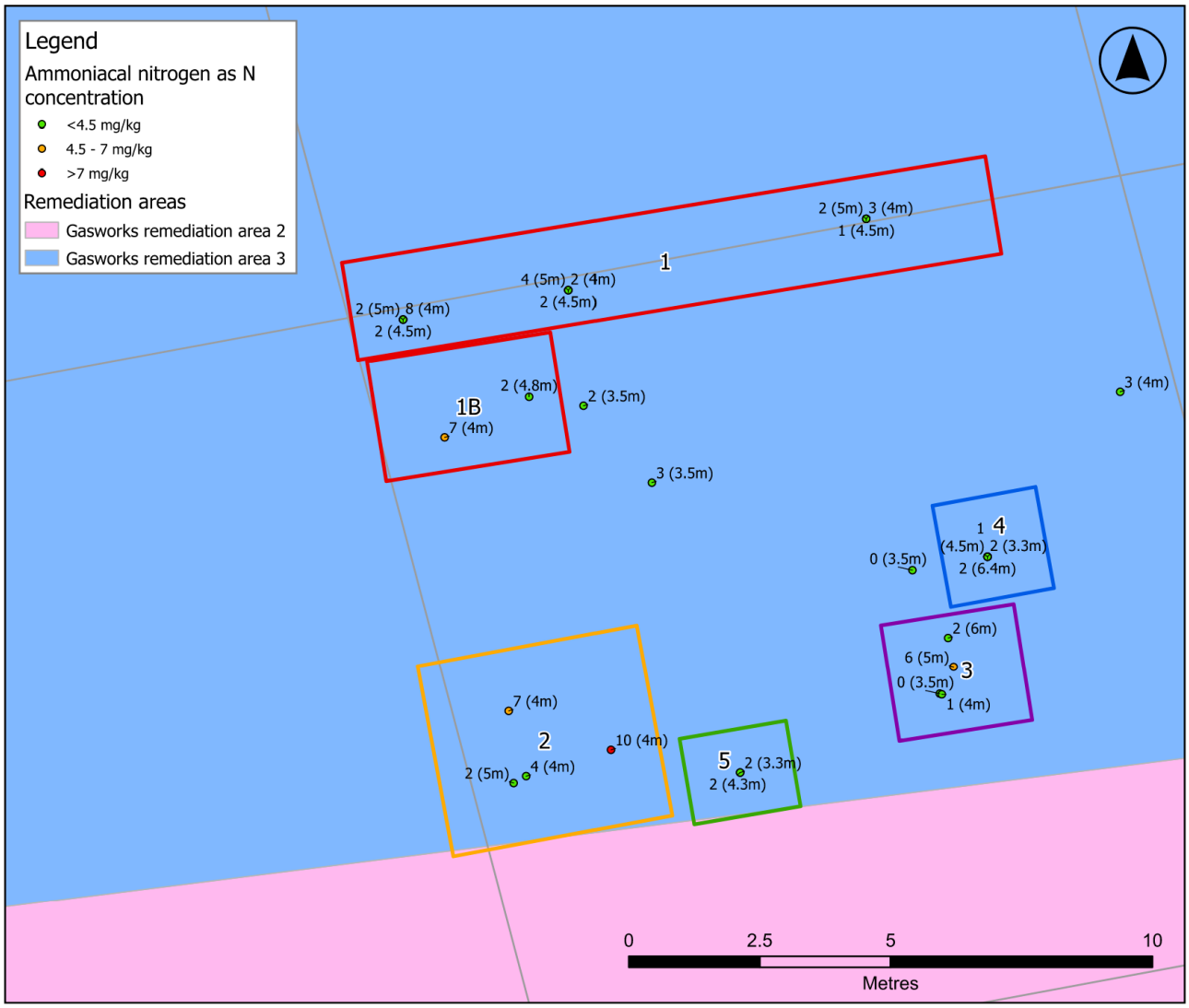


Figure 14. Delineation of ammoniacal nitrogen concentrations within grid square 7 (gasworks area 3)

Table 21. Additional excavations undertaken within grid square 7 (gasworks area 3)

Grid square 7 remedial excavation	Analysis of trial pit samples	Action taken
1	Elevated TPH concentrations at 4 mbgl (12700, 5800 and 4380 mg/kg). Acceptable TPH concentration at 4.5 mbgl (<10 and 18 mg/kg).	Excavated to 4.5 mbgl
1B	Elevated ammoniacal nitrogen concentration at 4 mbgl (7.2 mg/kg), acceptable concentration at 4.8 mbgl (1.8 mg/kg).	Excavated to 4.8 mbgl
2	Elevated TPH concentrations at 4 mbgl (2180 and 1900 mg/kg). Acceptable TPH concentration at 5 mbgl (959 mg/kg).	Excavated to 5 mbgl
3	Elevated TPH concentration at 4 mbgl (6430 mg/kg). Acceptable TPH concentrations at 5 mbgl and 6 mbgl (509 and 257 mg/kg). Elevated ammoniacal nitrogen concentration at 5 mbgl (5.5 mg/kg), acceptable concentration at 6 mbgl (2 mg/kg).	Excavated to 6 mbgl

Grid square 7 remedial excavation	Analysis of trial pit samples	Action taken
4	Elevated TPH concentrations at 4.5 mbgl (11600 mg/kg). Acceptable TPH concentrations at 6.4 mbgl (659 mg/kg).	Excavated to 6.4 mbgl
5	Elevated TPH concentrations at 3.3 mbgl (6900 mg/kg). Acceptable TPH concentration at 4.3 mbgl (62 mg/kg).	Excavated to 4.3 mbgl

Following the additional excavation detailed above, Table 22 summarises the data from qualifying verification samples i.e. samples taken from the final surface of the gasworks area 3 excavation. The final excavated surface is shown in Figure 15. Gasworks area 3 was backfilled from October 2024.

Table 22. Results summary of qualifying gasworks area 3 verification tests

Parameter	Verification target (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Ammoniacal nitrogen as N	4.5	27	2.52	5.0^
Anthracene	31	25	0.68	3.6
Benzo(a)pyrene	26	25	0.62	2.4
Fluoranthene	120	25	1.44	6.1
Ethylbenzene	4.54	25	-	0.01
o-Xylene	6.5	25	-	0.01
Isopropylbenzene	0.58	25	-	0.01
n-Propylbenzene	0.62	25	-	0.01
1,3,5-Trimethylbenzene	1.33	25	-	0.01
1,2,4-Trimethylbenzene	0.72	25	0.05	0.08
4-Isopropyltoluene	98.5	25	-	<0.005
n-Butylbenzene	12.1	25	-	<0.005
2-Methylnaphthalene	7.33	25	0.62	0.96
TPH total (>C6-C40)	1000*	25	301.57	959
^ Ammoniacal nitrogen discussed in Section 6.1.6.				



Figure 15. Extent and condition of excavation at gasworks area 3

6.1.5 Gasworks area 2 verification

The gasworks area 2 was excavated to 3.0 m, exceeding the 1.5 m recommended in the Arup RIP and 500 Series Ground Investigation Interpretation technical note owing to the visual and olfactory presence of TPH noted by site engineers.

Following the removal of obstructions and visual and olfactory signs of contamination, verification samples were taken from the base and walls of the excavation across a 15 m x 15 m grid, with grid squares labelled GWVE 10 to 11 and GWVE 17 to 25. As contamination was suspected, following on from the method used in grid square 7 of gasworks remediation area 3, verification samples were not formed of composite samples to allow the location of any potential contamination to be readily identified.

Initial verification samples showed exceedances of TPH at wall 11, 2-Methylnaphthalene at grid square 25, and ammoniacal nitrogen throughout the base of the excavation. The excavation was extended a further 1 m at grid square 25 and 1 m out at wall 11. Verification samples were collected from the new surface of grid square 25 and wall 11. Samples of ammoniacal nitrogen only were collected from the base of the excavation. Ammoniacal nitrogen results are discussed in Section 6.1.6.

Table 23 summarises the data from qualifying verification samples i.e. samples taken from the final surface of the gasworks area 2 excavation. Gasworks area 2 was backfilled in stages from November 2024.

Table 23. Results summary of qualifying gasworks area 2 verification tests

Parameter	Verification target (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Ammoniacal nitrogen as N	4.5	33	6.65	18.3^
Anthracene	31	33	0.62	2.04
Benzo(a)pyrene	26	33	1.65	6.70
Fluoranthene	120	33	1.63	6.16

Parameter	Verification target (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Ethylbenzene	4.54	33	0.05	0.14
o-Xylene	6.5	33	0.02	0.06
Isopropylbenzene	0.58	33	0.01	0.02
n-Propylbenzene	0.62	33	0.01	0.01
1,3,5-Trimethylbenzene	1.33	33	0.02	0.04
1,2,4-Trimethylbenzene	0.72	33	0.03	0.07
4-Isopropyltoluene	98.5	33	-	0.007
n-Butylbenzene	12.1	33	-	<0.005
2-Methylnaphthalene	7.33	33	0.91	2.92
TPH total (>C6-C40)	1000*	33	265	1100*
TPH band testing undertaken on samples exceeding initial TPH target*				
Parameter	**Verification target (mg/kg)**	**Number of samples**	**95% UCL (mg/kg)**	**Max (mg/kg)**
>C8-C10	153	1	-	5
>C10-C12	76	1	-	9
>C12-C16	208	1	-	66
>C16-C21	323	1	-	171
>C21-C40	2453	1	-	431

^ Ammoniacal nitrogen discussed in Section 6.1.6.

* In line with the RIP, samples that exceeded 1000 mg/kg of total TPH were further quantified against TPH bands. A single sample (GWVE-0010-COMP) recorded 1100 mg/kg initially and passed the respective TPH bands.

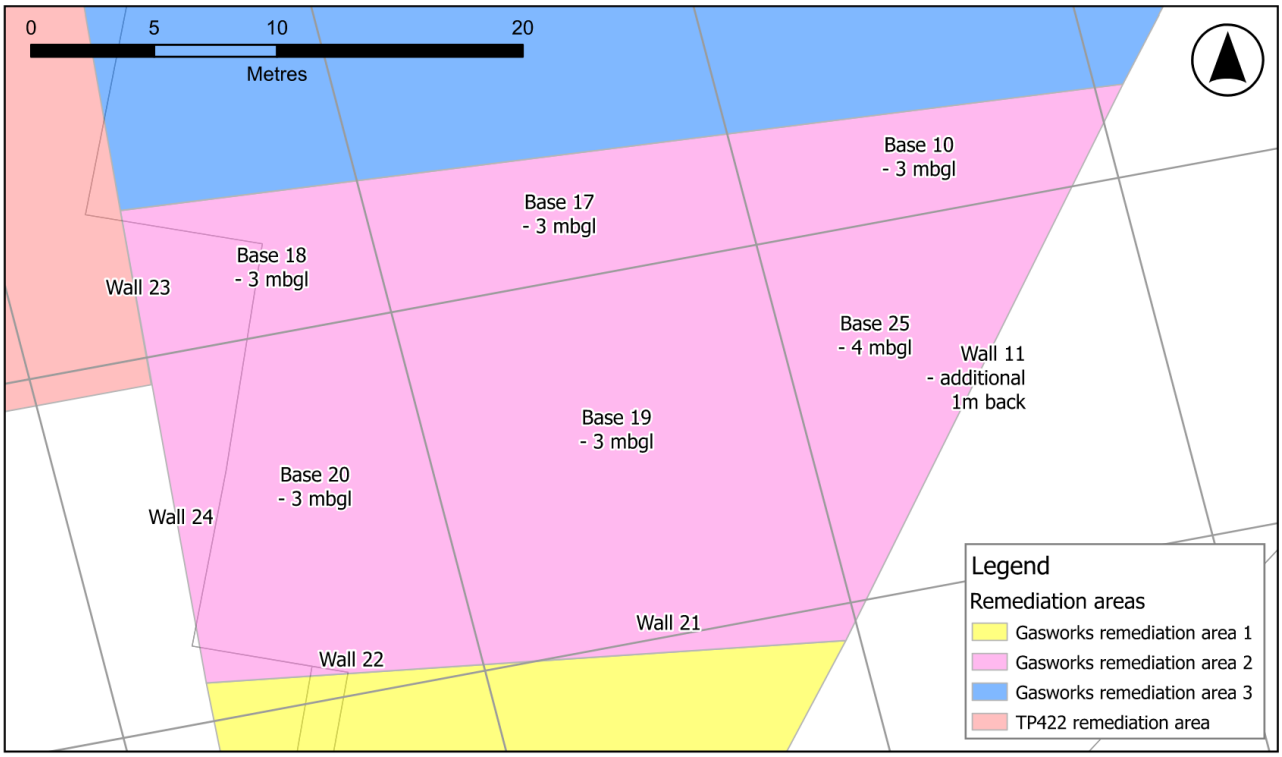


Figure 16. Final depths of excavation at gasworks remediation area 2



Figure 17. Backfilling of gasworks remediation area 2

6.1.6 Ammoniacal nitrogen

Samples for leachability of ammoniacal nitrogen were obtained from the base of the excavation. Samples were also re-tested for solid-phase ammoniacal nitrogen. As two weeks had elapsed since initial testing, the ammoniacal nitrogen had oxidised and in all cases a decrease in concentrations was observed.

Leachate testing of samples retrieved from these positions shows the ammoniacal nitrogen does not readily partition into water, with a maximum leachate value of 0.38 mg/L compared to the DQRA target of 8.72 mg/L.

A site-specific partition coefficient (Kd) was approximated by dividing the concentration in soil by the leachability result, ranging from 4.8 L/kg to 30 L/kg (Table 24). This is an order of magnitude higher than the 0.4 L/kg literature value [16] used during the DQRA. In addition, the area of exceedance has reduced in size to approximately 30 m by 20 m. Using the minimum site-specific Kd value as a conservative approach produces a Level 3 remedial target of 42.9 mg/kg of which the results on site are below.

Table 24. Summary of oxidation and leachability results

Sample	Solid testing (mg/kg)	Leachability results (mg/L)	Partition coefficient (Kd)
GWVE-18B-L	3.3	0.38	8.68
GWVE-21A-L	1.4	0.29	4.83
GWVE-22A-L	0.9	<0.05	N/A
GWVE-22B-L	1	<0.05	N/A
GWVE-22C-L	1.4	0.07	20
GWVE-23A-L	3	0.1	30
GWVE-24C-L	1.9	0.1	19
GW16L-01	1.8	<0.05	N/A
GW16L-02	2.2	0.16	13.75

The final ammoniacal nitrogen as N in soil from all qualifying gasworks results are summarised in Table 25 and shown in Figure 18.

Table 25. Statistical summary for gasworks ammoniacal nitrogen results

Number of samples	Max	Median	Min	Mean	Standard deviation	95% confidence interval	
						Lower	Upper
60	18.3	2.45	0.4	3.77	3.53	2.86	4.68

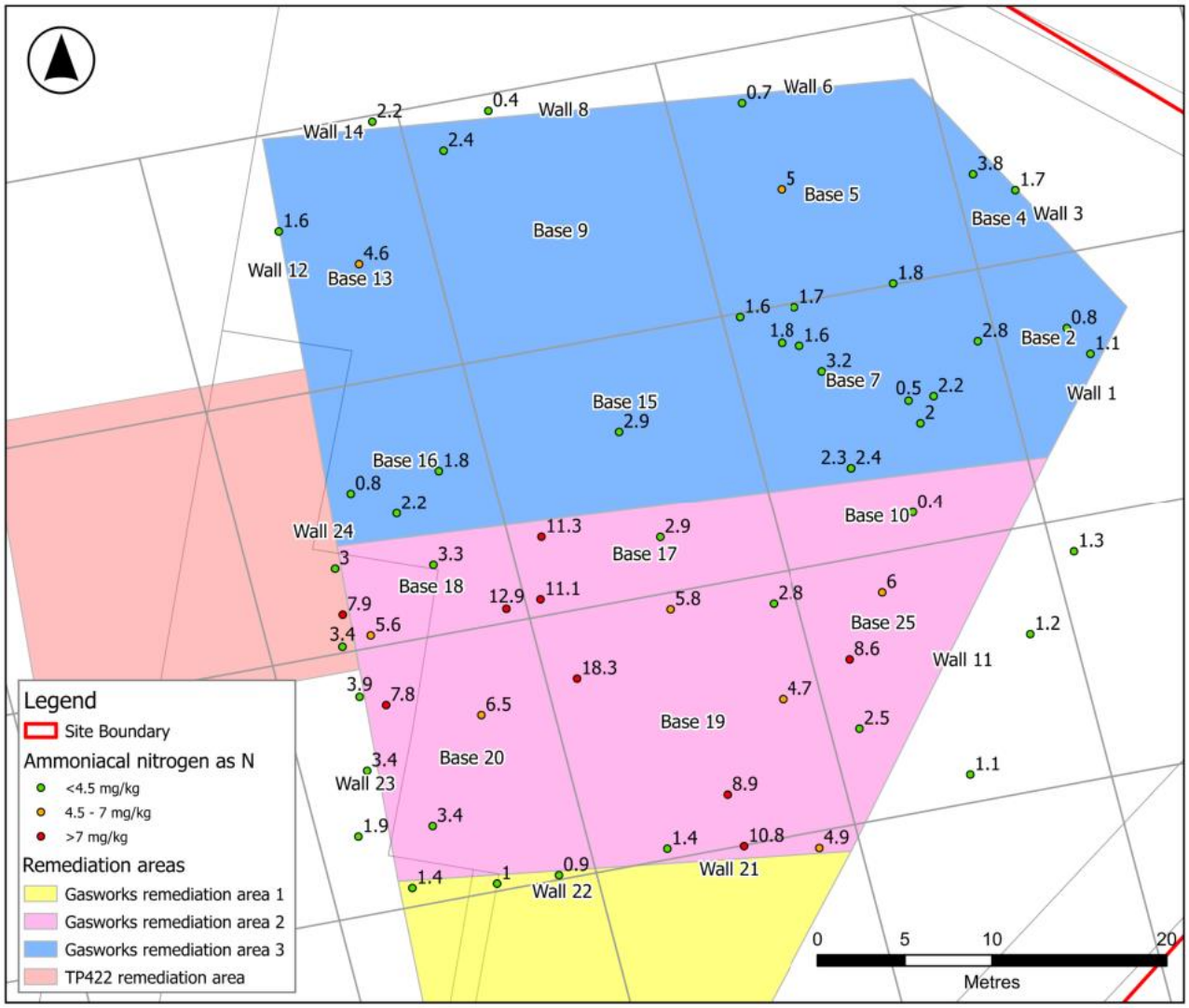


Figure 18. Ammoniacal nitrogen (as N) qualifying results in gasworks remediation areas 2 and 3

6.1.7 Gasworks verification summary

Most gasworks verification analysis results showed contamination had been removed to levels below the verification targets.

Some ammoniacal nitrogen as N exceeding the 4.5 mg/kg verification target was left in the ground at depths between 3.0 and 4.0 mbgl, despite extending the excavations from the recommended depths by between 0.5 and 2.5 m. It was not deemed practical or sustainable to continue with excavation and disposal, therefore leachate testing was undertaken. Leachate analysis demonstrated that the ammoniacal nitrogen as N did not readily partition in water and was significantly lower than the DQRA target. When using the most-conservative site-specific Kd value, a site-specific remedial target of 42.9 mg/kg was derived, of which all results on site were below.

Therefore, the gasworks is considered to have met the remediation objectives of the Remediation Strategy and RIP. The future site development will require a Foundations Works Risk Assessment, once details of piled foundations for future development are known.

6.2 Carriage shed remediation

6.2.1 Carriage shed strategy

The carriage shed was excavated following material management strategy B. This strategy refers to the segregation of material into three distinct categories:

- Material with visual or olfactory evidence of contamination.
- Saturated material that has been in contact with perched water within the carriage shed substructure.
- All other material.

The suitability for re-use (both geotechnically and geoenvironmentally) of each category of material was considered separately.

6.2.2 Carriage shed obstructions and contamination

An initial 500 mm of granular material was excavated from the surface of the carriage shed in February 2024. No visual or olfactory evidence of contamination was identified in this material, and it was stockpiled separately to the west of the carriage shed for re-use testing. Following re-use testing (discussed in Section 5) this material was re-used to partially backfill the verified carriage shed.

Below this initial 500 mm, the brick carriage shed substructure was uncovered featuring a series of platforms and troughs. Between the brick platforms were waste materials that were segregated and removed off-site throughout March 2024. Unsaturated bricks were recovered, stockpiled separately and tested for re-use.

Perched groundwater was present within the brick substructure. Any material that encountered the perched groundwater was segregated and removed as waste from site.

In total, 10,350 m^3 of material was excavated from the carriage shed, the majority of which was removed from site. 2,600 m^3 of granular material from the upper 500 mm was retained and re-used.



Figure 19. Carriage shed substructure revealed below initial 500 mm excavation

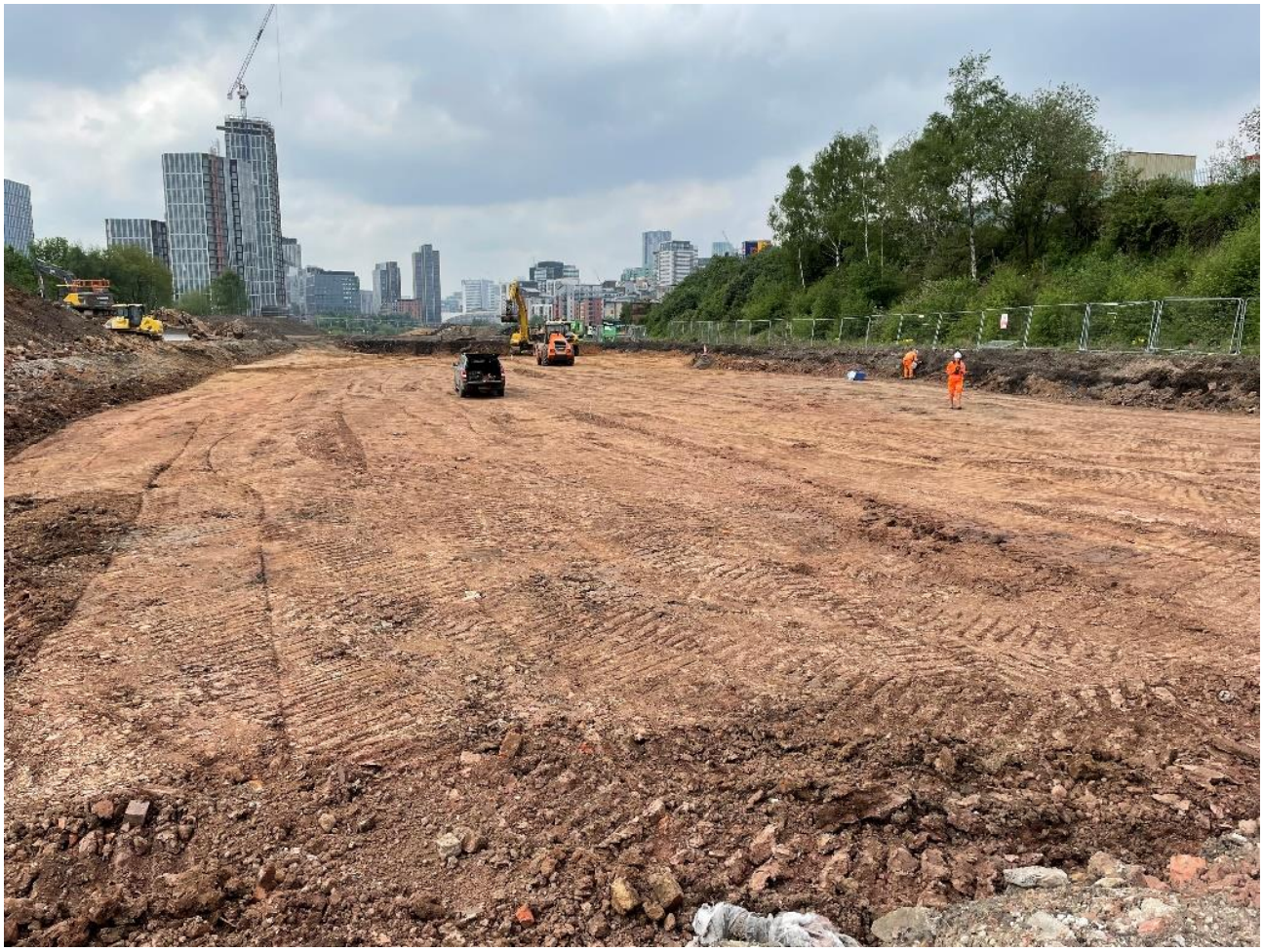


Figure 20. North of carriage shed following excavation

6.2.3 Carriage shed verification

Following the removal of obstructions and visual and olfactory signs of contamination, verification samples were taken from the base and walls of the excavation across a 25 m x 25 m grid, with grid squares labelled CSVE-001-COMP to CSVE-0032-COMP. Verification samples were formed of a composite of three samples from each grid square.

The initial verification of the carriage shed included grid squares 1 to 32, of which one sample CSVE-0030-COMP, from wall 30 – along the southern wall of the excavation, exceeded the verification criteria for TPH (2040 mg/kg) and two of the subsequent carbon bands.

Additional excavation of approximately 10 m x 10 m x 2 m depth was undertaken and the base and sides of the additional excavation were validated, with grid squares labelled CSVE-033-COMP to CSVE-0036-COMP. The excavation was extended east to the full width of the carriage shed, with samples labelled CSVE-037-COMP to CSVE-0039-COMP. A failure within CSVE-038-COMP led to further excavation and reverification of this grid square.

Table 26 summarises the data from qualifying verification samples i.e. samples taken from the final surface of the carriage shed excavation and not including those which were removed through further excavation (CSVE-29, -30, -35 and the original -38).

Table 26. Results summary of qualifying carriage shed verification tests

Parameter	Verification target (mg/kg)	Number of samples	95% UCL (mg/kg)	Max (mg/kg)
Anthracene	31	36	0.44	1.57
Benzo(a)pyrene	26	36	1.04	4.08
Fluoranthene	120	36	2.34	10
TPH total (>C6-C40)	1000*	36	379.44	1020*
PFOS	<0.002	36	-	<0.001
PFOA	<0.001	36	-	<0.001
PFPA	<0.002	36	-	<0.001
PFHxA	<0.002	36	-	<0.001
PFHpA	<0.002	36	-	<0.001
6:2-FTS	<0.002	36	-	<0.001
PFHxS	<0.002	36	-	<0.001
PFNA	<0.002	36	-	<0.001
TPH band testing undertaken on samples exceeding initial TPH target*				
Parameter	**Verification target (mg/kg)**	**Number of samples**	**95% UCL (mg/kg)**	**Max (mg/kg)**
>C8-C10	153	1	-	<10
>C10-C12	76	1	-	<10
>C12-C16	208	1	-	62
>C16-C21	323	1	-	233
>C21-C40	2453	1	-	731
* In line with the RIP, one sample that exceeded 1000 mg/kg of total TPH was further quantified against TPH bands. This sample did not exceed individual carbon bands.				

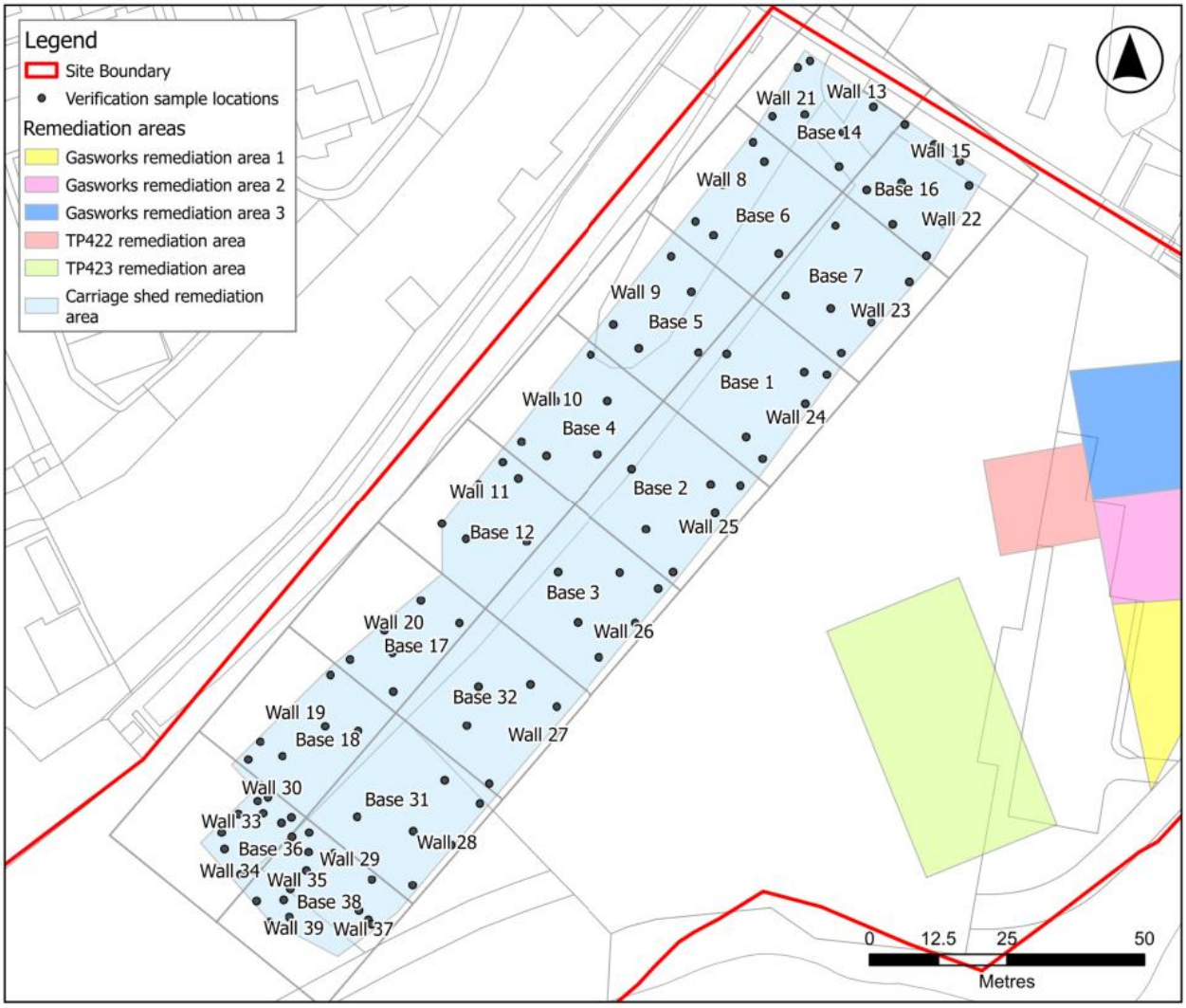


Figure 21. Locations of carriage shed verification samples

6.3 TP422/TP423 remediation areas

The TP422 hotspot was excavated to a depth of 2.5 m, and the TP423 hotspot was initially excavated to a depth of 0.5 m, as recommended in the Arup RIP and 500 Series Ground Investigation Interpretation technical note.

Following the removal of obstructions and visual and olfactory signs of contamination, verification samples were taken from the base and walls of the excavations across a 15 m x 15 m grid, with grid squares labelled TP422VE 1 to 5 and TP423VE 1 to 12. As the TP423 did not have clear walls, due to a reduced level dig to the same depth across a wider area, composite samples were retrieved from beyond the extent of the excavation on each side. Verification samples were formed of a composite of three samples from each grid square. Following an exceedance of PFOA in one sample at the base of TP423, this grid square was further reduced by 0.5 m with the material removed from site. Three new samples were collected from the base of the reduced grid square.

Table 27 summarises the data from qualifying verification samples i.e. samples taken from the final surface of the TP422 and TP423 excavations and not including those exceedances which were removed through further excavation.

Table 27. Results summary of TP422/TP423 verification samples

Parameter	Verification target (µg/kg)	Number of samples	Max (µg/kg)
PFPA	<2	17	<1
PFHxA	<2	17	<1
PFHpA	<2	17	<1
6:2-FTS	<2	17	<1
PFOA	<1	17	<1
PFHxS	<2	17	<1
PFNA	<2	17	<1
PFOS	<2	17	<1
PFDA	<2	14	<1

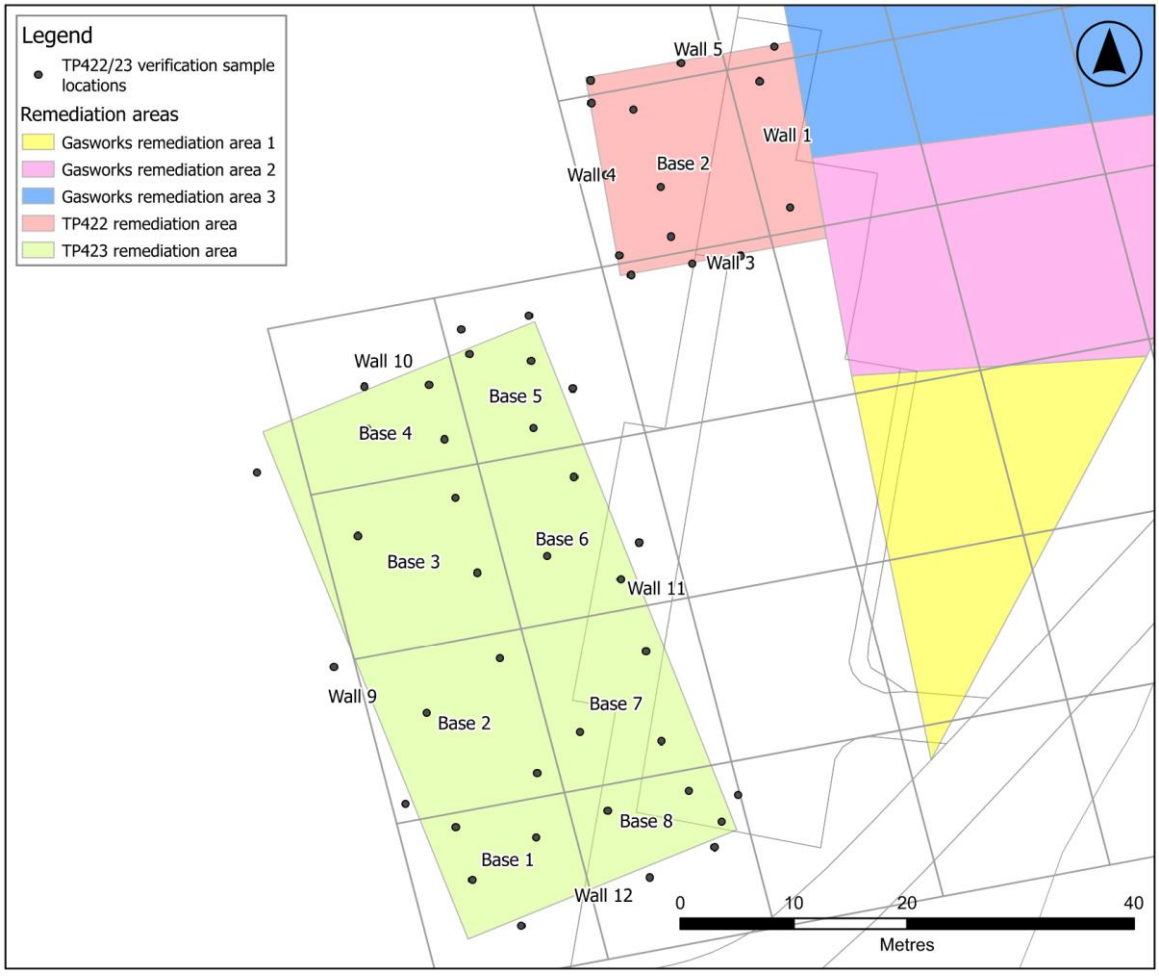


Figure 22. Locations of TP422/TP423 verification samples

7. Conclusion

7.1 Final site condition

This report demonstrates that remediation was successfully completed in line with the objectives of the Remediation Strategy and RIP.

7.1.1 Objectives

The remediation met the overall objective of remediating contamination sources that had been demonstrated as posing potential risks to human health and/or controlled waters. The remediation met the RIP objectives:

- Vegetation was cleared across development areas, and invasive species were treated.
- Historic structures were removed to a depth of 2 mbgl. The structures were crushed and, where suitable, re-used to improve the geotechnical properties of general fill.
- Remediation areas, which included the carriage shed, gasworks, and TP422 and TP423 hotspots, were excavated to at least the required depth identified in the RIP or its addendum. Verification analysis was undertaken and re-use criteria exceedances were addressed with further excavation and re-testing.
- Earthworks were completed across the site. A separate Geotechnical Addendum will describe the in-situ and laboratory geotechnical testing undertaken.
- Hydroseeding was undertaken on all exposed made ground across the site.



Figure 23. Final site condition, looking southwest over RB05a (former carriage shed) and RB05c

7.1.2 Material re-use

Sampling, testing and analysis undertaken during the works was in accordance with requirements of the RIP, the specification and the Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria technical note [4]. Any materials exceeding the re-use criteria were segregated and removed from site.

A total of 24,870 m^3 of material was re-used within the site.

7.1.3 Remediation excavations

Excavated materials from the gasworks, TP422 and TP423, and the majority of materials from the carriage shed, were removed from site and taken to suitable waste facilities. The base and sides of remedial excavations were verified in accordance with the requirements of the RIP.

Additional ground investigation required by the Environment Agency to delineate remediation areas and identify PFAS compounds, concluded that no remediation was required at the TP405A hotspot [3].

Combined with fly-tipped material, tarmac, and invasive-species contaminated material, the total mass of unsuitable material removed from site was 46,035 tonnes.

7.2 Updated conceptual site model

The following source-pathway-receptor linkages have been identified from the following sources: the GIR [10], the Conceptual Site Model for the emerging water [12], the PFAS Human Health Risk Assessment [13] and updated Controlled Waters DQRA [14].

Whilst the majority of contaminant linkages have been mitigated, further actions are required as part of the development phase, discussed in Section 7.3.

Table 28. Updated conceptual site model

Source	Pathway	Receptor	Mitigation implemented	Further mitigation required?
Made ground (including PFAS impacted soils)	Dermal contact, ingestion of soil/ soil dust, inhalation of soil vapour, inhalation of soil/ soil dust	Construction worker	Safe working practices were followed during the earthworks and remediation to control exposure to contaminants.	No
		Site users and neighbours	Good site working practices such as wheel washers and dust suppression were used to prevent the spread of dust and soil beyond the boundary. The surface was hydroseeded which will control dust generation.	No
		Interim user	Identified sources of contamination were removed and verified. The site has been made secure to reduce unauthorised access and the surface was hydroseeded which will limit contact with made ground beneath.	No
		Future site users in soft landscaping areas	Identified sources of contamination were removed and verified. A clean cover system is recommended to protect against contact with soil contaminants.	Clean cover system
	Leaching and infiltration	Shallow groundwater	Identified sources of contamination were removed and verified. Re-used excavated materials were screened against re-use criteria. Development will reduce infiltration through made ground providing further mitigation long term.	No
		Deep groundwater		
		River Irk		
	Pushing of contaminated	Deep groundwater	Identified sources of contamination were removed and verified. Completion of an	FWRA

Source	Pathway	Receptor	Mitigation implemented	Further mitigation required?
	soils during piling and migration	River Irk	FWRA will be required once details of piled foundations for future development are known.	
	Direct contact	Buried structural concrete	Development will require assessment of aggressive ground conditions and appropriate design of buried concrete in line with BRE SD1 [17].	Appropriate design of buried concrete
		Potable water supply pipes	Barrier pipe is recommended to be installed to protect against ingress of contaminants.	Appropriate pipework
		New planting in public open space	A clean cover system is recommended in areas of soft landscaping.	Clean cover system
Temporary stockpiles of excavated arisings Accidental leaks and spills during construction	Leaching and runoff	Surface water drainage	Excavated materials from the remediation areas were placed onto tarps. Visibly contaminated excavated arisings were placed directly onto road-going transport. Stockpiles were constructed to minimise rainfall infiltration and located far from the River Irk.	No
		River Irk		
	Leaching and infiltration	Shallow groundwater		
		Deep groundwater		
		River Irk		
Impacted shallow groundwater including PFAS-contaminated emerging water and NAPL	Dermal contact, ingestion	Construction worker	Safe working practices were followed during the earthworks and remediation to control exposure to contaminants.	No
		Future site user	Identified sources of contamination were removed and verified. Development will reduce infiltration through made ground providing further mitigation long term. A clean cover system is recommended in areas of soft landscaping.	Clean cover system
	Infiltration	Shallow groundwater	Identified sources of contamination were removed and verified. Perched groundwater was removed from the ground. Emerging water was treated and diverted into the sewer. Permanent treatment system and discharge to sewer required long term.	Permanent treatment system
		Deep groundwater	Identified sources of contamination were removed and verified. Perched groundwater was removed from the ground. Emerging water was treated and diverted into the sewer. PFAS concentrations were very low in deep groundwater compared to shallow groundwater suggesting no/limited pathway [14].	No
	Lateral migration	River Irk	Identified sources of contamination were removed and verified. Perched groundwater was removed from the ground. Emerging water was treated and diverted into the sewer. Modelling [14] showed the impact of diffuse PFAS from emerging water over time will not have a significant impact on the quality of the River Irk. Development will reduce infiltration	No

Source	Pathway	Receptor	Mitigation implemented	Further mitigation required?
			through made ground providing further mitigation long term.	
	Vertical flow via building piles	Deep groundwater	Completion of an FWRA will be required once details of piled foundations for future development are known.	FWRA
Ground gases	Ingress and accumulation of toxic, asphyxiating or explosive concentrations	Construction worker in deep trenches and chambers	Air monitoring equipment utilised during excavation. Machine operators in the gasworks carried air monitors, were rotated frequently, and were given extended breaks.	No
		Future site users	Appropriate gas protection is required during development, following plot-specific ground gas risk assessment.	Appropriate gas protection

7.3 Future remediation

The remediation completed on site covered the earthworks and infrastructure work only and did not include actions relating to follow-on development. Actions identified in the agreed Remediation Strategy and RIP and that remain to be completed are:

- Provision of a suitable clean cover system in all areas of soft landscaping within the developed site
- A ground gas risk assessment and installation of appropriate gas protection
- Installation of appropriate water supply pipework
- A piling risk assessment to ensure foundation works do not present additional risks to controlled waters
- Concrete aggressivity analysis and provision for chemically resistant concrete if required.

A permanent treatment system will need to form part of the future development of the site to treat the emerging water prior to discharge to United Utilities (UU) sewers. Permanent consent to discharge will need to be agreed with UU.

The final development plans and build phase do not form part of the scope of this verification report and will be the responsibility of the future developer. This will be covered by a separate planning application and a future verification report will be needed to address the outstanding requirements of the Remediation Strategy. Production of the future verification report will be the responsibility of the developer.

References

[1] LK Group Ltd (2023) Victoria North Infrastructure Work, Phase 1 Delivery (Pre-Development) Remediation Strategy, Ref LKC 22 1587, August 2023.

[2] Arup (2023) Victoria North HIF Infrastructure Works – Phase 1 Remediation Implementation and Verification Plan VNIF-ARP-ZZ-YYY-RP-CG-0017, October 2023.

[3] Arup (2024) 500 Series Ground Investigation Interpretation, January 2024.

[4] Arup (2024) Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria, March 2024.

[5] Arup (2023) Victoria North HIF Infrastructure & Enabling Works Specification for Highway Works - Civil Infrastructure VNIF-ARP-ZZ-YYY-SP-C-001, November 2023.

[6] Arup (2022) Preliminary GIR Report VNIF-ARP-XX-XXX-RP-CG-0007, January 2022.

[7] AEG (2019) Northern Gateway Final Factual Report. Ref. NW1580, March 2019.

[8] AEG (2021) Northern Gateway Phase 2 Final Factual Report. Ref. NW1604, October 2021.

[9] BAM Ritchies (2022) Victoria North HIF Infrastructure & Enabling Works – Phase 3 GI. Ground Investigation Report – Factual Account. Project Reference: BAX.326R, October 2022.

[10] Arup (2022) Ground Investigation Report VNIF-ARP-XX-XXX-RP-CG-0012, November 2022.

[11] Arup (2022) Controlled Waters Detailed Quantitative Risk Assessment VNIF-ARP-ZZ-YYY-RP-CG-0011, November 2022.

[12] Arup (2023) Conceptual Site Model and Ground Investigation Rationale VNIF-ARP-ZZ-YYY-RP-CG-0013 P02, March 2023.

[13] Arup (2023) PFAS Human Health Risk Assessment VNIF-ARP-ZZ-YYY-RP-CG-0014, June 2023.

[14] Arup (2023) Controlled Waters Detailed Quantitative Risk Assessment VNIF-ARP-ZZ-YYY-RP-CG-1000, August 2023.

[15] Waste and Resources Action Programme (2013) Quality Protocol: Aggregates from Inert Waste. End of waste criteria for the production of aggregates from inert waste.

[16] Buss, S.R., Herbert, A.W., Morgan, P. and Thornton, S.F. (2003) Review of ammonium attenuation in soil and groundwater. NGWCLC report NC/02/49.

[17] BRE (2005) Concrete in Aggressive Ground Special Digest 1.

Drawings

i. VNIF-ARP-00-YYY-DR-CE-0001 As-Built HIF Lite Site Contours (using highway formation levels)
ii. VNIF-ARP-00-YYY-DR-CE-0005 Approximate Location and Extent of Historic Constraints
iii. VNIF-ARP-00-YYY-DR-CE-0006 Extent of As-Built Required Proof-rolling and Soft-spot Treatment
iv. VNIF-ARP-00-YYY-DR-CE-0007 As-Built Treatment at Formation Level
v. VNIF-ARP-00-YYY-DR-CE-0008 As-Built Decommissioned Boreholes
vi. VNIF-ARP-00-YYY-DR-CE-0010 As-Built Extent of Temporary Site Weathering Layer
vii. VNIF-ARP-00-YYY-DR-CE-0011 As-Built Stockpile Risk Zone
viii. VNIF-ARP-00-YYY-DR-CE-0029 Extent of As-Built Remedial Excavations
ix. VNIF-ARP-00-YYY-DR-CE-0030 As-Built Instrumentation Positions
x. VNIF-ARP-00-YYY-DR-CU-0002 Existing and As-Built Utilities & Drainage General Arrangement (Sheet 1 of 3)
xi. VNIF-ARP-00-YYY-DR-CU-0003 Existing and As-Built Utilities & Drainage General Arrangement (Sheet 2 of 3)
xii. VNIF-ARP-00-YYY-DR-CU-0004 Existing and As-Built Utilities & Drainage General Arrangement (Sheet 3 of 3)
xiii. VNIF-ARP-00-YYY-DR-G-0013 Site Clearance
xiv. VNIF-ARP-ZZ-YYY-DR-CE-0014 As-Built Red Bank Terrace Regrading Cross Sections (Sheet 1 of 2)
xv. VNIF-ARP-ZZ-YYY-DR-CE-0015 As-Built Red Bank Terrace Regrading Cross Sections (Sheet 2 of 2)
xvi. VNIF-ARP-ZZ-YYY-DR-CE-0016 As-Built Earthworks Cross Sections Plan
xvii. VNIF-ARP-ZZ-YYY-DR-CE-0017 As-Built Plot RB02 and RB03 Regrading Cross Sections

A1

N

1 in 3 slopes from Plateau Avenue to existing ground

1 in 3 slopes from Plateau Avenue to development plots

Existing slope regraded to 1:2.5

RB01 40.00m
RB02 38.00m
RB03 38.00m
RB04a 42.00m
RB05a 43.50m
RB05b 42.00m
RB05c 43.00m
RB06
RB07
RB08
RB11
RB12a
RB12b
RB16
RB17
NT02
NT03
NT04

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

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   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.
5. Refer to Landscape Architect drawings for details of soft and hard landscaping in the development site.
6. Plot boundaries are indicative based on FEC masterplan.
7. Plot levels represent the ground level for the interim state following HIF Enabling Works and do not represent building Finished Floor Levels.
8. Invasive species present across the site. Refer to VNIF-BNL-ZZ-YYY-MS-W-0003 Invasive Species Management Plan to confirm location prior to undertaking earthworks.

Key

- Extent of Infrastructure Works
- Development Plot Boundaries
- Major Contour (1.0m interval)
- Minor Contour (0.2m interval)

Rev	Date	Description	By	Chkd	Appd	Auth
P06	31/05/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P07	15/12/23	Updated to suit BAM/Pell comments	AS	EF	EF	—
P08	05/01/24	Updated to suit BAM/Pell comments 19/12/2023	AS	EF	EF	—
P09	12/01/24	Updated to suit BAM comments 11/01/2024	AS	EF	EF	—
C02	12/01/24	Updated to suit BAM comments 11/01/2024	AS	EF	EF	LC
P10	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	—
C03	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	LC
P11	21/08/26	As-Built Issue	AS	ES	ES	—
C04	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built HIF Lite Site Contours
(using highway formation levels)

Scale at A1	1:1000	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C04	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

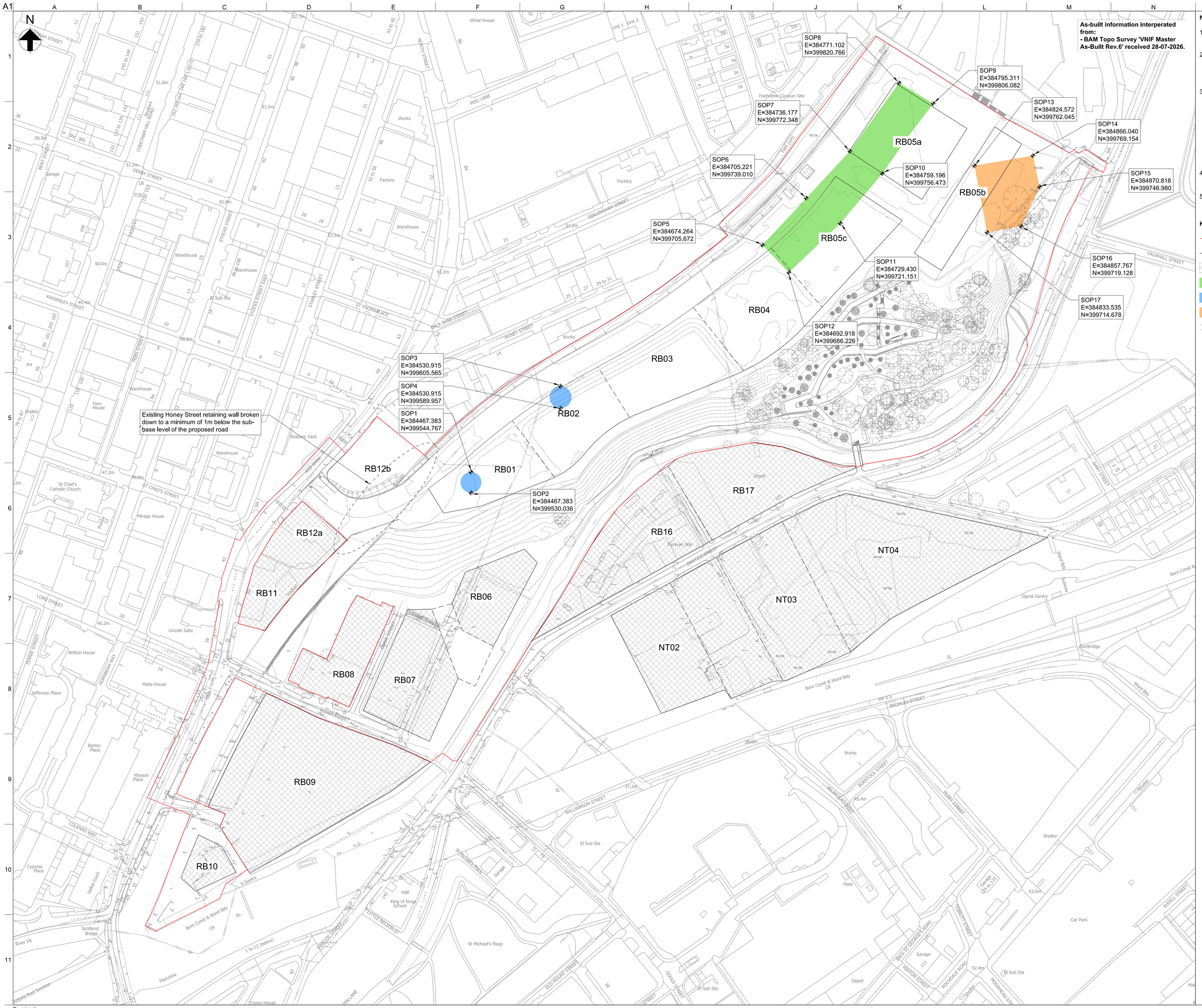
Name

VNIF	- ARP -	00	- YYY -	DR	- CE -	0001
Project	Originator	Volume	Location	Type	Role	Number

Do not scale

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   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.
5. Extents of historic constraints are taken from geo-referenced historic mapping and are therefore approximate. See CE-0029 for the as-built remedial excavations.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Provision of Utility and Drainage Infrastructure Only
- Remains of Former Carriage Shed - remediated
- Former Rail Turntables - removed
- Former Gas Works - remediated
- Existing Drainage

Rev	Date	Description	By	Chkd	Appd	Auth
P01	20/06/22	Draft for Client Comment	AS	CR	LS	—
P02	02/09/22	WS4 Issue for BAM	AS	CR	LS	—
P03	21/03/23	HIF Lite Full Issue	AS	CR	RG	—
P04	31/05/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P05	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	EF	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments	EF	EF	EF	LC
P06	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

Approximate Location and Extent of Historic Constraints

Scale at A1	1:1250	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

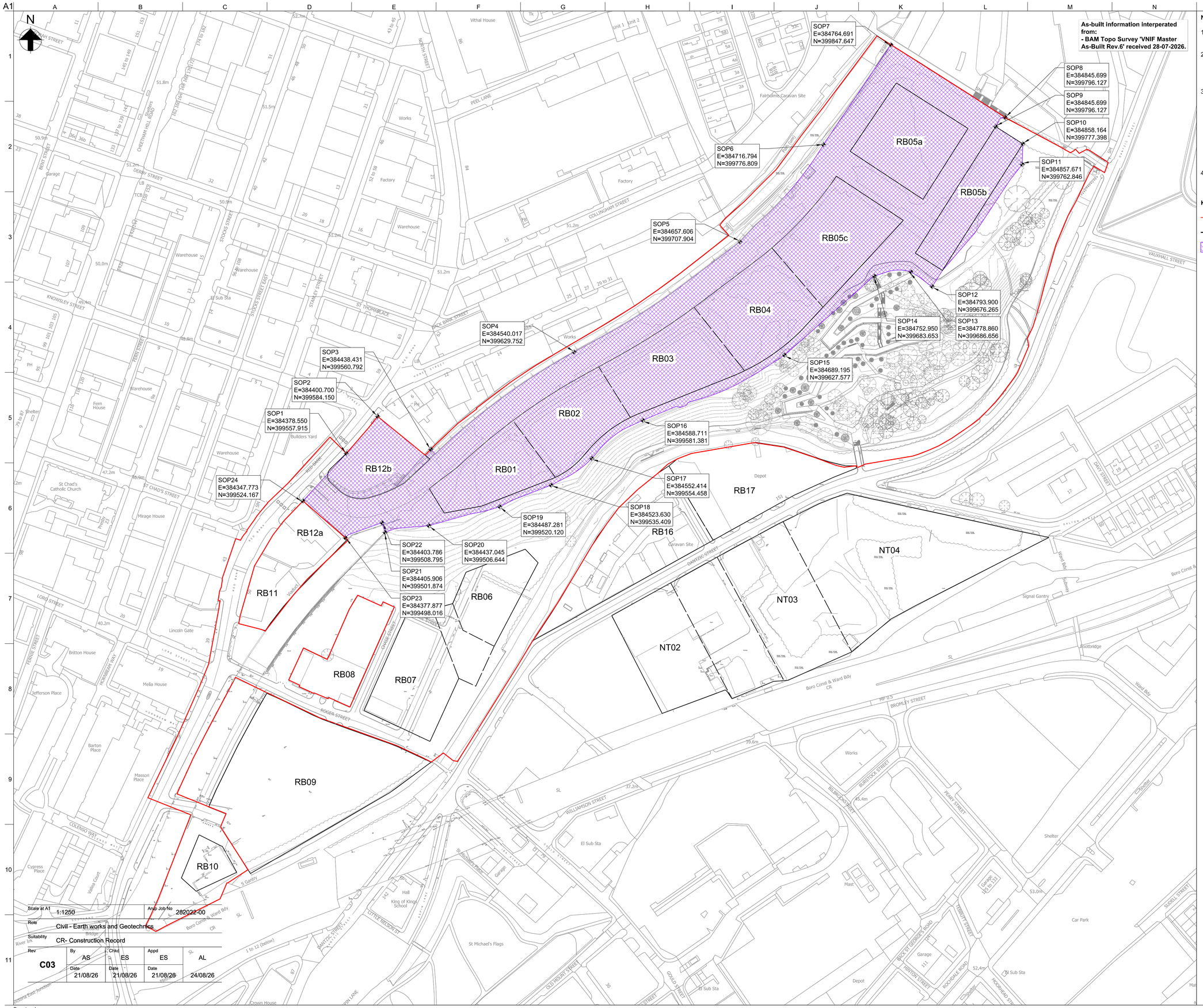
VNIF - ARP - 00 - YYY - DR - CE - 0005

Project | Originator | Volume | Location | Type | Role | Number

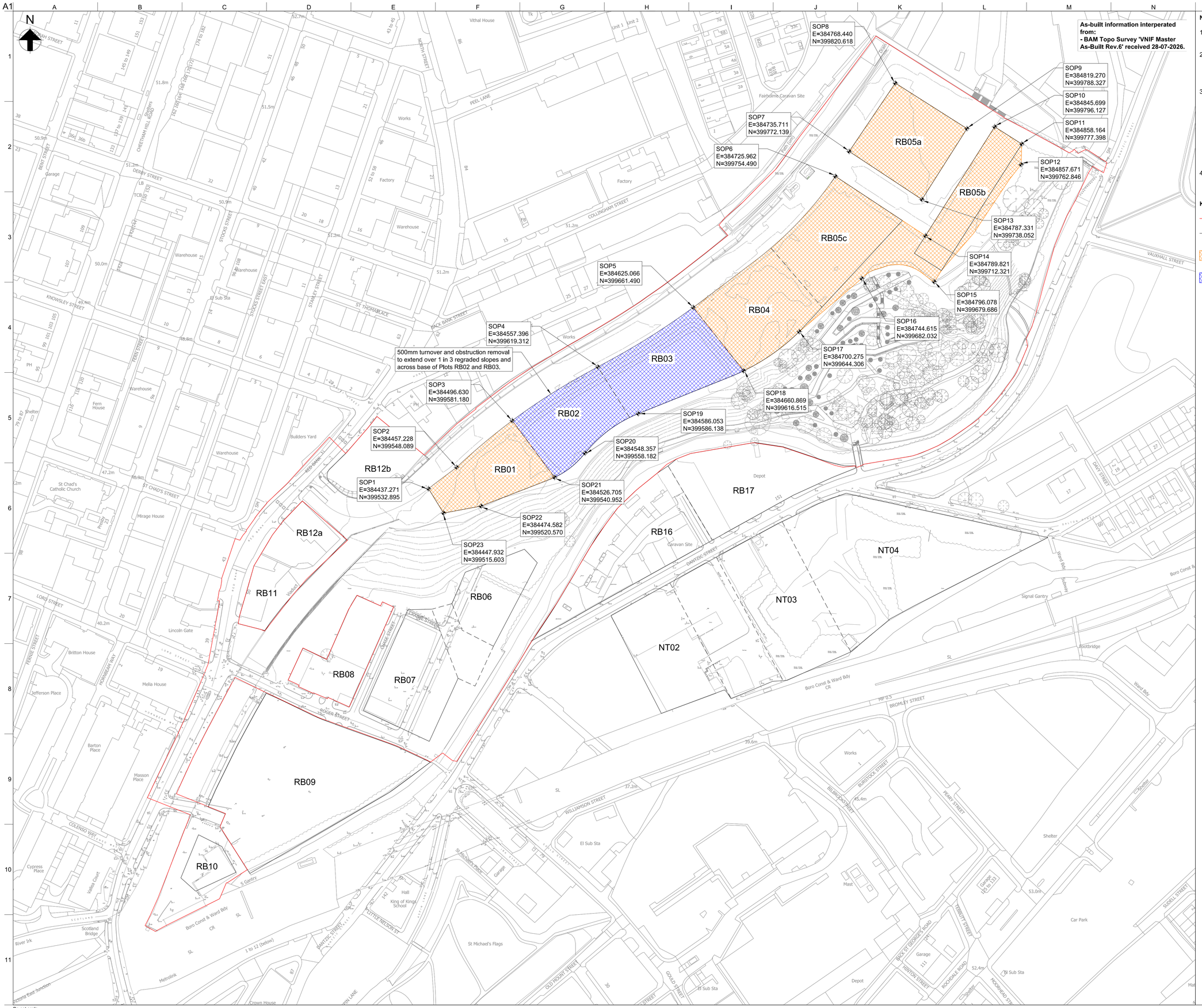
Do not scale

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A1


As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.
SOP1 E=384378.550 N=399557.915
SOP2 E=384400.700 N=399584.150
SOP3 E=384438.431 N=399560.792
SOP4 E=384540.017 N=399629.752
SOP5 E=384657.606 N=399707.904
SOP6 E=384716.794 N=399776.809
SOP7 E=384764.691 N=399847.647
SOP8 E=384845.699 N=399796.127
SOP9 E=384845.699 N=399796.127
SOP10 E=384858.164 N=399777.398
SOP11 E=384857.671 N=399762.846
SOP12 E=384793.900 N=399676.265
SOP13 E=384778.860 N=399686.656
SOP14 E=384752.950 N=399683.653
SOP15 E=384689.195 N=399627.577
SOP16 E=384588.711 N=399581.381
SOP17 E=384552.414 N=399554.458
SOP18 E=384523.630 N=399535.409
SOP19 E=384487.281 N=399520.120
SOP20 E=384437.045 N=399506.644
SOP21 E=384405.906 N=399501.874
SOP22 E=384403.786 N=399508.795
SOP23 E=384377.877 N=399498.016
SOP24 E=384347.773 N=399524.167
RB01
RB02
RB03
RB04
RB05a
RB05b
RB05c
RB06
RB07
RB08
RB09
RB10
RB11
RB12a
RB12b
RB16
RB17
NT02
NT03
NT04
N
Vithal House
Fairbourne Caravan Site
Factory
Works
Warehouse
Garage
Depot
Caravan Site
Builders Yard
Fern House
St Chad's Catholic Church
Mirage House
Lincoln Gate
Britton House
Mella House
Jefferson Place
Barton Place
Masson Place
Cypress Place
Valeo Court
King of Kings School
Crown House
Car Park
Shelter
Signal Gantry
Bootbridge
El Sub Sta
Mast
Garage 111
Garage 115 to 133
Garage 135 to 137
Garage 141
Hall 143
PH
Shelter
Tk
Unit 1
Unit 2
PEEL LANE
NORTH STREET
DERBY STREET
COLLINGHAM STREET
STOCKS STREET
STOCKS STREET EAST
STANLEY STREET
ST THOMAS PLACE
PACK BANK STREET
HOPE STREET
FERN STREET
KNOWSLEY STREET
BERY STREET
CHEETHAM HILL ROAD
ST CHAD'S STREET
LORD STREET
FERRIE STREET
HORNBEAM WAY
WOODBANK WALK
COLENSO WALK
LITTLE NELSON ST
GAMFRIC STREET
OLD MOUNT STREET
GOULD STREET
GRANGE STREET
ROGER STREET
WILLIAMSON STREET
BURSTOCK STREET
BULBROOK STREET
PEARY STREET
TERRITT STREET
BACK ST GEORGES ROAD
TIRYON STREET
ROCHDALE ROAD
ROCHDALE STREET
DARY STREET
SUDELL STREET
VAUXHALL STREET
BROMLEY STREET
BRITON STREET
Ward Bdy Bypass
Boro Const & Ward Bdy CR
River Irk
Victoria Exchange
Victoria East Junction
Victoria Station
Victoria Station Junction
Victoria Station Tunnel
Victoria Station Tunnel Junction
Victoria Station Tunnel Junction
Victoria Station Tunnel Junction

A1



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4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Excavated to 500mm below reduced level/at-grade level and removed all obstructions encountered to a depth of 2m below original ground level.
- Earthworks reduced to the required level

Rev	Date	Description	By	Chkd	Appd	Auth
P01	20/06/22	Draft for Client Comment	AS	CR	LS	—
P02	02/09/22	WS4 Issue for BAM	AS	CR	LS	—
P03	21/03/23	HIF Lite Full Issue	AS	CR	RG	—
C01	12/10/23	HIF Lite Full Issue	AS	CR	RG	RC
P04	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	EF	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments	EF	EF	EF	LC
P05	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built
Treatment at Formation Level

Scale at A1	1:1250	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF	- ARP -	00	- YYY -	DR	- CE -	0007
Project	Originator	Volume	Location	Type	Role	Number

A1

Exploration Hole	Depth (m bgl)	East	North	Elevation (m AOD)	Inclinometer?	Groundwater sampling?	Ground gas monitoring?	Groundwater level monitoring?
BH101	7.8	384796.682	399802.989	43.377			Y	Y
BH102	8.5	384763.18	399691.375	42.934		Y		Y
BH103	8.3	384689.014	399695.588	42.57		Y		Y
BH104	15	384607.46	399631.24	41.588			Y	Y
BH105	11.2	384463.735	399571.588	40.666		Y		Y
BH106	11.3	384459.989	399509.165	40.671				Y
BH112	4.3	384401.713	399486.259	32.249			Y	Y
BH201	9.3	384762.04	399820.851	43.4		Y	Y	Y
BH202	9	384723.888	399716.141	42.663		Y	Y	Y
BH203	24	384845.747	399748.863	41.891		Y		Y
BH204	16.5	384815.474	399703.59	43.276			Y	Y
BH205	10.8	384689.078	399735.153	42.578		Y	Y	Y
BH206	6.8	384729.233	399690.75	42.692			Y	Y
BH207	16.1	384654.246	399626.1	41.638			Y	Y
BH208	14.6	384562.98	399592.56	40.66			Y	Y
BH209	17	384548.843	399628.33	41.214			Y	Y
BH210	19.6	384479.67	399554.7	40.45		Y		Y
BH211A	11.6	384441.79	399513.96	40.44				Y
BH212	11.5	384487.32	399426.078	30.377		Y		Y
BH213	3.5	384475.449	399487.578	31.943			Y	Y
BH214A	5	384430.619	399360.713	30.033				Y
WS201B	1.65	384735.29	399787.2	43.55			Y	Y
WS207	5	384628.92	399674.79	41.91				Y
WS208	4.65	384566	399473	30.168				Y
BH301	15.08	384852.11	399762.18	41.87	Y			
BH302	14.08	384826.9	399705.6	42.76	Y			
BH303	12.7	384719.84	399660.22	42.3				Y
BH304	16.7	384618.46	399600.49	41.18			Y	Y
BH305	12.03	384525.98	399549.39	39.77			Y	Y
BH306	6.3	384520.14	399490.63	31.45		Y	Y	Y
BH307	5	384461.01	399430.12	30.61			Y	Y
BH309	11.5	384863.87	399641.32	30.5				Y
BH310	16	384838.09	399638.18	32.6		Y		Y
BH311	17.32	384411.7	399557.68	46.2			Y	Y
BH312	16.82	384382.83	399519.93	45.6				Y
BH313	12.4	384395.83	399507.84	39.81			Y	Y
BH314	12.45	384439.7	399502.02	43.11		Y	Y	Y
BH315	13.52	384852.04	399729.3	39.26		Y	Y	Y
BH320	6.7	384889.76	399761.36	34.26			Y	Y
BH321	6	384770.34	399639.02	34.2		Y	Y	Y
BH322	6	384715.2	399587.28	32.49		Y		Y
BH323	2.6	384658.4	399576.88	30.21			Y	Y
BH324	15.3	384593.99	399584.6	41			Y	Y
BH325	4.5	384446.11	399359.16	29.95			Y	Y

Monitoring Borehole Co-ordinates Table

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

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4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Provision of Utility and Drainage Infrastructure Only
- BHxxx Borehole - Inclinometers
- BHxxx Borehole - Groundwater sampling and ground gas monitoring
- BHxxx Borehole - Groundwater level monitoring

Rev	Date	Description	By	Chkd	Appd	Auth
P01	20/06/22	Draft for Client Comment	AS	CR	LS	—
P02	02/09/22	WS4 Issue for BAM	AS	CR	LS	—
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P04	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	EF	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments	EF	EF	EF	LC
P05	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built
Decommissioned Boreholes

Scale at A1	1:1250	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

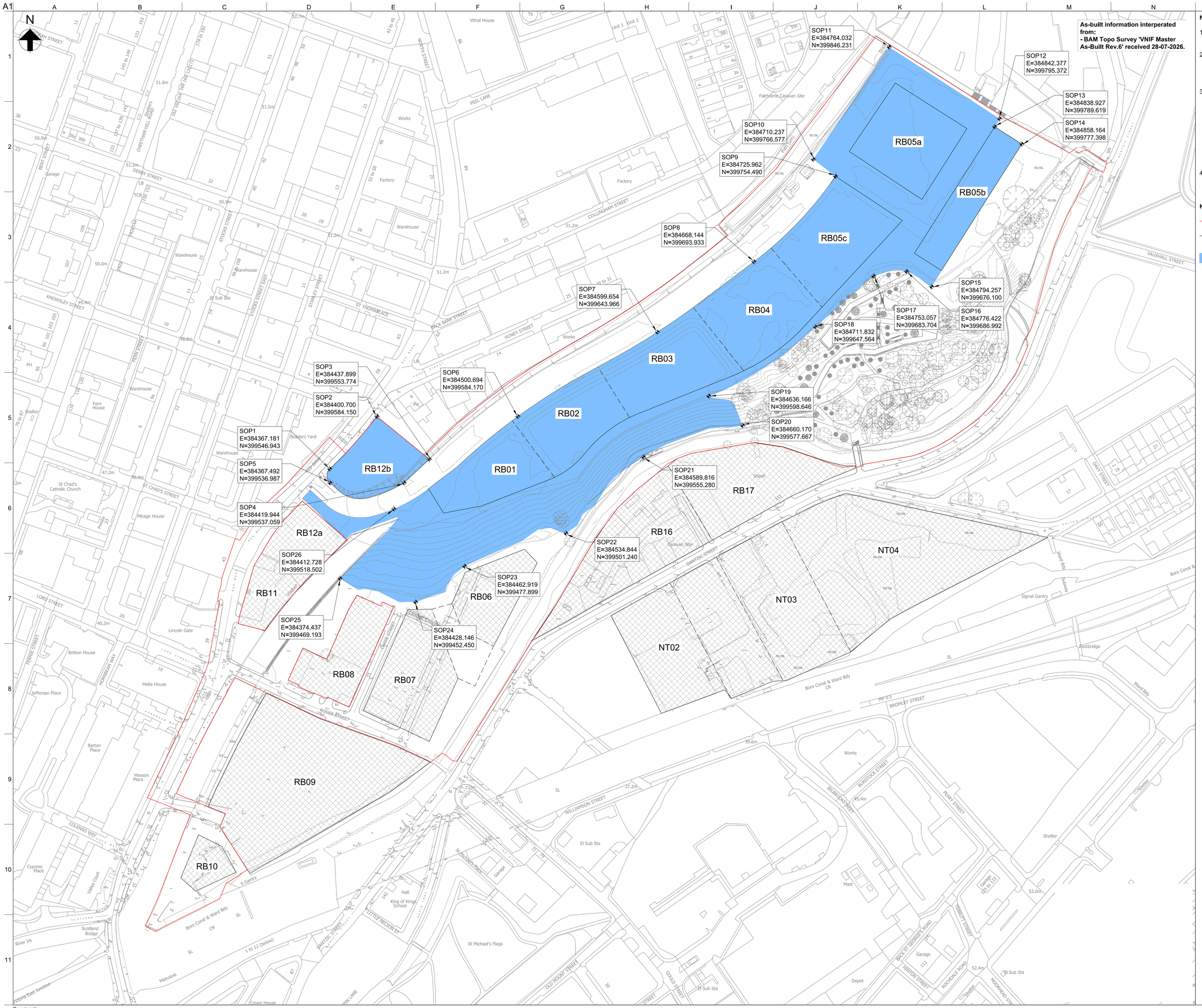
Name

VNIF - ARP - 00 - YYY - DR - CE - 0008
Project | Originator | Volume | Location | Type | Role | Number

Do not scale

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A1



Do not scale

Notes

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3. Layout is based on:
   - Plot boundaries developed in conversation with FEC Winter 2021/2 - boundaries between adjacent plots are indicative only and are subject to change as the FEC masterplan is developed.
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Extent of 100mm thick hydroseeded suitable fill layer placed across all areas of made ground left exposed on completion of the VNHIF works

Rev	Date	Description	By	Chkd	Appd	Auth
P01	20/06/22	Draft for Client Comment	AS	CR	LS	—
P02	02/09/22	WS4 Issue for BAM	AS	CR	LS	—
P03	21/03/23	HIF Lite Full Issue	AS	CR	RG	—
C01	12/10/23	HIF Lite Full Issue	AS	CR	RG	RC
P04	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	EF	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments	EF	EF	EF	LC
P05	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built
Extent of Temporary Site Weathering Layer

Scale at A1	1:1250	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF - ARP - 00 - YYY - DR - CE - 0010

Project | Originator | Volume | Location | Type | Role | Number

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N

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

The limit of the no-stockpile area is defined as a zone measured 45m in plan from the river wall or 15m in plan from the upper crest of the existing slope, whichever is greatest

Limit of No Stockpile Zone, defined as 15m in plan from the upper crest of the REGRADED slope

RB01
RB02
RB03
RB04
RB05a
RB05b
RB05c
RB06
RB07
RB08
RB09
RB10
RB11
RB12a
RB12b
RB16
RB17
NT02
NT03
NT04

SOP1 E=384295.836 N=399412.965
SOP2 E=384302.143 N=399436.860
SOP3 E=384320.835 N=399431.911
SOP4 E=384379.192 N=399496.878
SOP5 E=384421.588 N=399514.002
SOP6 E=384477.351 N=399525.506
SOP7 E=384505.839 N=399536.366
SOP8 E=384521.241 N=399557.598
SOP9 E=384636.431 N=399627.956
SOP10 E=384688.182 N=399640.784
SOP11 E=384727.265 N=399685.178
SOP12 E=384777.637 N=399692.380
SOP13 E=384812.302 N=399695.420
SOP14 E=384836.744 N=399706.956
SOP15 E=384864.415 N=399769.584
SOP16 E=384845.453 N=399795.909
SOP17 E=384891.678 N=399770.594
SOP18 E=384900.134 N=399763.939
SOP19 E=384874.999 N=399714.331
SOP20 E=384846.777 N=399711.940
SOP21 E=384859.923 N=399677.502
SOP22 E=384841.886 N=399654.300
SOP23 E=384815.974 N=399663.171
SOP24 E=384830.284 N=399696.020
SOP25 E=384848.000 N=399652.225
SOP26 E=384848.303 N=399632.815
SOP27 E=384825.515 N=399592.384
SOP28 E=384764.983 N=399561.051
SOP29 E=384718.174 N=399560.228
SOP30 E=384646.469 N=399570.753
SOP31 E=384582.628 N=399547.303
SOP32 E=384537.800 N=399487.175
SOP33 E=384490.856 N=399411.527
SOP34 E=384444.879 N=399337.912
SOP35 E=384428.959 N=399345.951
SOP36 E=384468.732 N=399413.063
SOP37 E=384505.312 N=399489.975
SOP38 E=384453.911 N=399451.387
SOP39 E=384422.615 N=399447.080
SOP40 E=384374.880 N=399464.500
SOP41 E=384319.157 N=399400.494

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   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Extent of No Stockpile Zone
- Extent of No Build and No Stockpiling Zone
- Extent of No Stockpile Zone, defined as 15m from the upper crest of the REGRADED slope

Rev	Date	Description	By	Chkd	Appd	Auth
P01	20/06/22	Draft for Client Comment	AS	CR	LS	—
P02	02/09/22	WS4 Issue for BAM	AS	CR	LS	—
P03	21/03/23	HIF Lite Full Issue	AS	CR	RG	—
P04	06/09/23	HIF Lite Full Issue	AS	CR	AL	—
C01	12/10/23	HIF Lite Full Issue	AS	CR	AL	RC
P05	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	EF	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments	EF	EF	EF	LC
P06	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built
Stockpile Risk Zone

Scale at A1	1:1250		Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics			
Suitability	CR- Construction Record			
Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF	- ARP -	00	- YYY -	DR	- CE -	0011
Project	Originator	Volume	Location	Type	Role	Number

Do not scale

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   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.

Key

- Extent of Infrastructure Works
- Plot Boundary
- Provision of Utility and Drainage Infrastructure Only
- Extent of As-Built Remedial Excavations

Rev	Date	Description	By	Chkd	Appd	Auth
P01	21/08/26	As-Built Issue	AS	ES	ES	—
C01	24/08/26	As-Built Issue	AS	ES	ES	AL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

Extent of As-Built remedial excavations

Scale at A1	Arup Job No 282022-00
Role	Civil - Earth works and Geotechnics
Suitability	CR- Construction Record

Rev	By	Chkd	Appd	
C01	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF	- ARP -	00	- YYY -	DR	- CE -	0029
Project	Originator	Volume	Location	Type	Role	Number

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A1


N
As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.
RB01
RB02
RB03
RB04
RB05a
RB05b
RB05c
RB06
RB07
RB08
RB09
RB10
RB11
RB12a
RB12b
RB16
RB17
NT02
NT03
NT04
GL: 42.500m AOD
GL: 42.500m AOD
GL: 41.965m AOD
GL: 43.924m AOD
Fairbourne Caravan Site
Vithal House
Factory
Warehouse
Works
Builders Yard
Depot
Caravan Site
Car Park
Shelter
Boro Const & Ward Bdy CR
Signal Gantry
Subway
Rootbridge
Ward Bdy
Boro Const & Ward Bdy CR
Metrolink
Victoria East Junction
River Irk
Scotland Bridge
Crown House
St Michael's Flags
King of Kings School
Britton House
Mella House
Jefferson Place
Barton Place
Masson Place
Cypress Place
Lincoln Gate
Mirage House
St Chad's Catholic Church
Fern House
Garage
PH
El Sub Sta
Mast
Hall
Garage
Works
Factory
Warehouse
Fish (UG)
Duct
Tk
Unit 1
Unit 2
PEEL LANE
NORTH STREET
CHEETHAM HILL ROAD
BERY STREET
DERBY STREET
STOCKS STREET
STOCKS STREET EAST
STANLEY STREET
ST THOMAS PLACE
PACK BARN STREET
HONEY STREET
KNOWSLEY STREET
FERN STREET
ST CHAD'S STREET
RED BANK
COLLINGHAM STREET
VAUXHALL STREET
DANY STREET
DAMTZIC STREET
LITTLE NELSON ST
ROGER STREET
WILLIAMSON STREET
BILBROOK STREET
BURSTOCK STREET
PEARY STREET
BECK ST GEORGE'S ROAD
TERBUTT STREET
TINTON STREET
ROCHDALE ROAD
RICHMOND STREET
SUDELL STREET
OLD MOUNT STREET
GOULD STREET
LORD STREET
FERNIE STREET
HORNBEAM WAY
COLENSO WAY
VALLEY COURT
BRIDGE STREET
1 to 12 (below)
2 to 12
13 to 45
46 to 52
52 to 58
59 to 63
64 to 84
85 to 95
96 to 108
109 to 125
126 to 144
145 to 149
150 to 174
174 to 182
183 to 197
198 to 212
213 to 227
228 to 242
243 to 257
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288 to 302
303 to 317
318 to 332
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498 to 512
513 to 527
528 to 542
543 to 557
558 to 572
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663 to 677
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693 to 707
708 to 722
723 to 737
738 to 752
753 to 767
768 to 782
783 to 797
798 to 812
813 to 827
828 to 842
843 to 857
858 to 872
873 to 887
888 to 902
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948 to 962
963 to 977
978 to 992
993 to 1007
1008 to 1022
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1338 to 1352
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1368 to 1382
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1923 to 1937
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1968 to 1982
1983 to 1997
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2013 to 2027
2028 to 2042
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2073 to 2087
2088 to 2102
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2118 to 2132
2133 to 2147
2148 to 2162
2163 to 2177
2178 to 2192
2193 to 2207
2208 to 2222
2223 to 2237
2238 to 2252
2253 to 2267
2268 to 2282
2283 to 2297
2298 to 2312
2313 to 2327
2328 to 2342
2343 to 2357
2358 to 2372
2373 to 2387
2388 to 2402
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2628 to 2642
2643 to 2657
2658 to 2672
2673 to 2687
2688 to 2702
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2988 to 3002
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3363 to 3377
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3423 to 3437
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3468 to 3482
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3663 to 3677
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3693 to 3707
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3738 to 3752
3753 to 3767
3768 to 3782
3783 to 3797
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3828 to 3842
3843 to 3857
3858 to 3872
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4443 to 4457
4458 to 4472
4473 to 4487
4488 to 4502
4503 to 4517
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4533 to 4547
4548 to 4562
4563 to 4577
4578 to 4592
4593 to 4607
4608 to 4622
4623 to 4637
4638 to 4652
4653 to 4667
4668 to 4682
4683 to 4697
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4743 to 4757
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4788 to 4802
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7968 to 7982
7983 to 7997
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28323 to 28337
28338 to 28352
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28368 to 28382
28383 to 28397
28398 to 28412
28413 to 28427
28428 to 28442
28443 to 28457

A1

Key

- Extent of Infrastructure Works
- Trial Hole Location
- THXX Trial Hole Reference
- T-ELC Telecoms BT
- T-VF-C Telecoms Vodafone Duct
- T-VM-C Telecoms Virgin Media Duct
- G-LP-C Gas Low Pressure Main
- G-MP-C Gas Medium Pressure Main
- E-LV-C Electricity Low Voltage
- E-6.6kV-C Electricity 6-6.6kV
- E-33kV-C Electricity 33kV
- E-132kV-C Electricity 132kV
- 6.6kV Secondary Substation
- E-SLTC-D MCC Street Lighting and Control Ducting
- W-TR-D Water Trunk Main
- W-DT-D Water Distribution Main
- D-CWS-C Drainage Combined Sewer
- D-CWS-O Drainage Combined Sewer Overflow (CSO)
- D-UNK-C Drainage Unknown Private Drain
- Unknown Asset
- XXX Asset ID Reference - see Note 9

Extent of surveyed utilities

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

See sheet 2 of 3

Notes

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3. Background is based on:
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Existing Utilities layout based on the following information:
   - Utility Search Map drawing 97079 undertaken by Atkins dated 24/06/2021.
   - GPR Survey drawing PUM-11943-U-DR-0001 Rev 02 undertaken by Precision Utility Mapping dated 18/01/2022.
   - Trial hole model VNIF-BNL-ZZ-YYY-M3-W-0001 P01 undertaken by BAM dated 07/09/2022.
   - BAM discovered drainage model received 31/01/2023.
   - Gatelines Trial Hole Survey undertaken by BAM received 23/07/2025.
   - BAM P&P drainage survey received 04/09/2025.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
5. Positions of services on this drawing are indicative only and are taken from the sources listed above. No guarantee is given for the accuracy of information and it is intended for information only. Areas should be suitably surveyed prior to construction/excavation.
6. Where electricity and telecommunications cables are indicated there may be multiple cables present.
7. Telecommunications cables shown do not reflect that in some areas ducts are shared between companies.
8. Utility linestyles have been used to reflect the level of accuracy as per PAS128 standard. The Located Service Classification table below gives a brief overview. For further details refer to document 'PAS 128:2014 Specification for underground utility detection, verification and location'.

Located Service Classification	Certainty/Risk
Type A Verification - Visual Identification	Class
Type B Detection - Typically GPR and EML techniques are used	
Type C Site reconnaissance - Physical surface features identified	
Type D Desktop utility records search	

9. Refer to schedule VNIF-ARP-ZZ-YYY-SH-CU-0001 for further asset information.
10. Assets outside of site boundary are shown for completeness.

Rev	Date	Description	By	Chkd	Appd	Auth
P05	27/01/23	HIF Lite TA Review	AS	TW	RG	—
P06	10/03/23	HIF Lite Full Issue	AS	TW	RG	—
C02	13/03/23	HIF Lite Full Issue	AS	TW	RG	HG
P07	01/09/23	HIF Lite Full Issue	TW	TW	TW	—
C03	12/10/23	HIF Lite Full Issue	TW	TW	TW	RC
P08	08/08/25	TA issue	AS	TK	GL	—
P09	12/09/25	Construction Issue	AS	EC	GL	—
C04	15/09/25	Construction Issue	AS	EC	GL	AL
P10	21/08/26	As-Built Issue	AS	ES	ES	—
C05	24/08/26	As-Built Issue	AS	ES	ES	AL

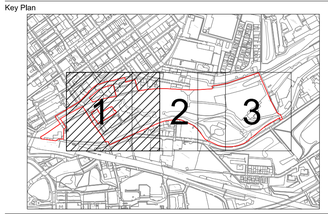
ARUP

6th Floor 3 Piccadilly Place
Manchester M1 3BN
Tel +44 161 228 2331 Fax +44 161 228 6879
www.arup.com

Client: MANCHESTER CITY COUNCIL; bam nuttall

Project Title: Victoria North HIF Infrastructure & Enabling Works

Key Plan



Drawing Title: Existing and As-Built Utilities & Drainage General Arrangement Sheet 1 of 3

Scale at A1	1:500	Arup Job No	282022-00
Role	Consultant for Utilities		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C05	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name: VNIF - ARP - 00 - YYY - DR - CU - 0002
(Project | Originator | Volume | Location | Type | Role | Number)

Do not scale

© Arup

A1

See sheet 1 of 3

See sheet 2 of 3

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

Key

- Extent of Infrastructure Works
- Trial Hole Location
- THXX Trial Hole Reference
- Telecoms BT
- Telecoms Vodafone Duct
- Telecoms Virgin Media Duct
- Gas Low Pressure Main
- Gas Medium Pressure Main
- Electricity Low Voltage
- Electricity 6-6.6kV
- Electricity 33kV
- Electricity 132kV
- 6.6kV Secondary Substation
- MCC Street Lighting and Control Ducting
- Water Trunk Main
- Water Distribution Main
- Drainage Combined Sewer
- Drainage Combined Sewer Overflow (CSO)
- Drainage Unknown Private Drain
- Unknown Asset
- XXX Asset ID Reference - see Note 9

Key - SCW ducting installed through HIF

- Electricity 150mm LV Ducting (Private Owned)
- Electricity Access Chamber
- Electricity 150mm LV Ducting (ENWL Owned)
- Streetlighting 50 and 100mm Ducting
- Comms 50 and 100mm Ducting
- Streetlight & CCTV Columns Base Plates
- Streetlight and Comms Access Chamber
- Distribution Board Cabinet

Extents of services installed through HIF works

D01 D02 D03 D04 D05 D06 D07 D28 D29

TH06 TH07 TH08 TH09 TH10 TH11 TH16 TH17

E44 G06 T12 U13 D06 U14 U15 U16 W02 W01 E14 E15 U12 T01 G07b E25 G10 T02 U17 U18 G11 U20 U21 U22 U23 W01 E03 E57 E26 E22 E46 E45 T19 W19 W20 D17

HONEY STREET DANTZIC STREET

Caravan Site Depot Works

Notes

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3. Background is based on:
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Existing Utilities layout based on the following information:
   - Utility Search Map drawing 97079 undertaken by Atkins dated 24/06/2021.
   - GPR Survey drawing PUM-11943-U-DR-0001 Rev 02 undertaken by Precision Utility Mapping dated 18/01/2022.
   - Trial hole model VNIF-BNL-ZZ-YYY-M3-W-0001 P01 undertaken by BAM dated 07/09/2022.
   - BAM discovered drainage model received 31/01/2023.
   - Gatelines Trial Hole Survey undertaken by BAM received 23/07/2025.
   - BAM P&P drainage survey received 04/09/2025.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
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7. Telecommunications cables shown do not reflect that in some areas ducts are shared between companies.
8. Utility linestyles have been used to reflect the level of accuracy as per PAS128 standard. The Located Service Classification table below gives a brief overview. For further details refer to document 'PAS 128:2014 Specification for underground utility detection, verification and location'.

Located Service Classification	Certainty/Risk
Type A Verification - Visual identification	Class
Type B Detection - Typically GPR and EML techniques are used	
Type C Site reconnaissance - Physical surface features identified	
Type D Desktop utility records search	

9. Refer to schedule VNIF-ARP-ZZ-YYY-SH-CU-0001 for further asset information.
10. Assets outside of site boundary are shown for completeness.

Rev	Date	Description	By	Chkd	Appd	Auth
P05	27/01/23	HIF Lite TA Review	AS	TW	RG	—
P06	10/03/23	HIF Lite Full Issue	AS	TW	RG	—
C02	13/03/23	HIF Lite Full Issue	AS	TW	RG	HG
P07	01/09/23	HIF Lite Full Issue	TW	TW	TW	—
C03	12/10/23	HIF Lite Full Issue	TW	TW	TW	RC
P08	08/08/25	TA issue	AS	TK	GL	—
P09	12/09/25	Construction Issue	AS	EC	GL	—
C04	15/09/25	Construction Issue	AS	EC	GL	AL
P10	21/08/26	As-Built Issue	AS	ES	ES	—
C05	24/08/26	As-Built Issue	AS	ES	ES	AL

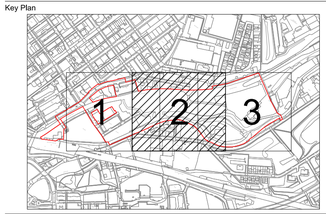
ARUP

6th Floor 3 Piccadilly Place
Manchester M1 3BN
Tel +44 161 228 2331 Fax +44 161 228 6879
www.arup.com

Client: MANCHESTER CITY COUNCIL; bam nuttall

Project Title: Victoria North HIF Infrastructure & Enabling Works

Key Plan



Drawing Title: Existing and As-Built Utilities & Drainage General Arrangement Sheet 2 of 3

Scale at A1	1:500	Arup Job No	282022-00
Role	Consultant for Utilities		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C05	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name: VNIF - ARP - 00 - YYY - DR - CU - 0003
(Project | Originator | Volume | Location | Type | Role | Number)

Do not scale

© Arup

A1

See sheet 2 of 3



As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.
- BAM Topo Survey 'U Tube As-Built Survey Rev.2' received 03-08-2026

Key - SCW ducting installed through HIF

- Electricity 150mm LV Ducting (Private Owned)
- Electricity Access Chamber
- Electricity 150mm LV Ducting (ENWL Owned)
- Streetlighting 50 and 100mm Ducting
- Comms 50 and 100mm Ducting
- Streetlight & CCTV Columns Base Plates
- Streetlight and Comms Access Chamber
- Distribution Board Cabinet

Key

- Extent of Infrastructure Works
- Trial Hole Location
- THXX Trial Hole Reference
- Telecoms BT
- Telecoms Vodafone Duct
- Telecoms Virgin Media Duct
- Gas Low Pressure Main
- Gas Medium Pressure Main
- Electricity Low Voltage
- Electricity 6-6.6kV
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- Water Distribution Main
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- Drainage Combined Sewer Overflow (CSO)
- Drainage Unknown Private Drain
- Unknown Asset
- XXX Asset ID Reference - see Note 9

Notes

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3. Background is based on:
   • Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   • Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   • Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.

4. Existing Utilities layout based on the following information:
   - Utility Search Map drawing 97079 undertaken by Atkins dated 24/06/2021.
   - GPR Survey drawing PUM-11943-U-DR-0001 Rev 02 undertaken by Precision Utility Mapping dated 18/01/2022.
   - Trial hole model VNIF-BNL-ZZ-YYY-M3-W-0001 P01 undertaken by BAM dated 07/09/2022.
   - BAM discovered drainage model received 31/01/2023.
   - Gatelines Trial Hole Survey undertaken by BAM received 23/07/2025.
   - BAM P&P drainage survey received 04/09/2025.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.

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6. Where electricity and telecommunications cables are indicated there may be multiple cables present.

7. Telecommunications cables shown do not reflect that in some areas ducts are shared between companies.

8. Utility linestyles have been used to reflect the level of accuracy as per PAS128 standard. The Located Service Classification table below gives a brief overview. For further details refer to document 'PAS 128:2014 Specification for underground utility detection, verification and location'.

Located Service Classification	Certainty/Risk
Type A Verification - Visual identification	Class
Type B Detection - Typically GPR and EML techiques are used	
Type C Site reconnaissance - Physical surface features identified	
Type D Desktop utility records search	

9. Refer to schedule VNIF-ARP-ZZ-YYY-SH-CU-0001 for further asset information.

10. Assets outside of site boundary are shown for completeness.

Rev	Date	Description	By	Chkd	Appd	Auth
P05	27/01/23	HIF Lite TA Review	AS	TW	RG	—
P06	10/03/23	HIF Lite Full Issue	AS	TW	RG	—
C02	13/03/23	HIF Lite Full Issue	AS	TW	RG	HG
P07	01/09/23	HIF Lite Full Issue	TW	TW	TW	—
C03	12/10/23	HIF Lite Full Issue	TW	TW	TW	RC
P08	08/08/25	TA issue	AS	TK	GL	—
P09	12/09/25	Construction Issue	AS	EC	GL	—
C04	15/09/25	Construction Issue	AS	EC	GL	AL
P10	21/08/26	As-Built Issue	AS	ES	ES	—
C05	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

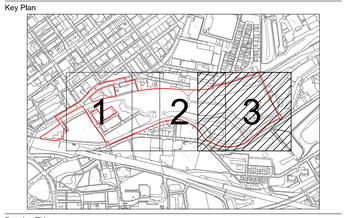
MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Key Plan



Drawing Title

Existing and As-Built Utilities & Drainage General Arrangement
Sheet 3 of 3

Scale at A1	1:500	Arup Job No	282022-00
Role	Consultant for Utilities		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C05	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF - ARP - 00 - YYY - DR - CU - 0004
Project | Originator | Volume | Location | Type | Role | Number

Do not scale

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N

Earth bund

Collapsed pipe remains in situ. Connectivity between temporary treatment plant and public sewer provided via above ground pipework.

Green circles indicate areas of general debris scattered across the surface which have been cleared to provide safe working area

Private drainage mostly abandoned. Portion remains in-situ due to presence of incoming flows from Honey St wall. Refer drawings VNIF-ARP-00-YYY-DR-CU-0002 to 0004 for details

Existing toilet block and slabs

Turntable removed, piles left in-situ

Cables to previous Creamline Dairies disconnected. Chamber remains in footpath

S278 agreement granted and works undertaken. Refer to drawing VNIF-ARP-00-YYY-DR-CH-4001 for details

Tall floodlight

Concrete slabs from former buildings

Electrical cables disconnected and left in-situ

P&P surfacing generally maintained with asphalt patch repairs applied to small areas.

Approximate location of demolition waste

Debris from human occupation distributed throughout area

Two trees which obstruct access

Large fallen tree blocking access from car park area

Electric cables disconnected at site boundary

RB01
RB02
RB03
RB04
RB05a
RB05b
RB05c
RB06
RB07
RB08
RB09
RB10
RB11
RB12a
RB12b
RB16
RB17
NT02
NT03
NT04

Notes

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3. Layout is based on:
   - Plot boundaries developed in conversation with FEC Winter 2021/22 boundaries between adjacent plots are indicative only and are subject to change as the FEC masterplan is developed.
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.

4. Existing Utilities and Drainage layout based on the following information:
   - Utility Search Map drawing 97079 by Atkins dated 24/06/2021.
   - GPR Survey drawing PUM-11943-U-DR-0001 Rev 02 undertaken by Precison Utility Mapping dated 18/01/2022.
   - Site walkover observations.

5. Due to the previous industrial land uses and buildings which occupied the site there are private services present on the site. These are to be abandoned where possible within the site clearance process.

6. Works within public highway are subject to a Section 278 agreement.

7. Refer to VNIF-ARP-ZZ-YYY-SP-C-0001 Series 200 and Series 600 for details of removal of below ground structures.

8. Refer to Series 600 and VNIF-ARP-00-YYY-DR-CE-0005 for areas of specific remediation.

9. Refer to VNIF-PLA-ZZ-YYY-DR-L-1006 Tree Retention and Removal Plan for areas of vegetation removal.

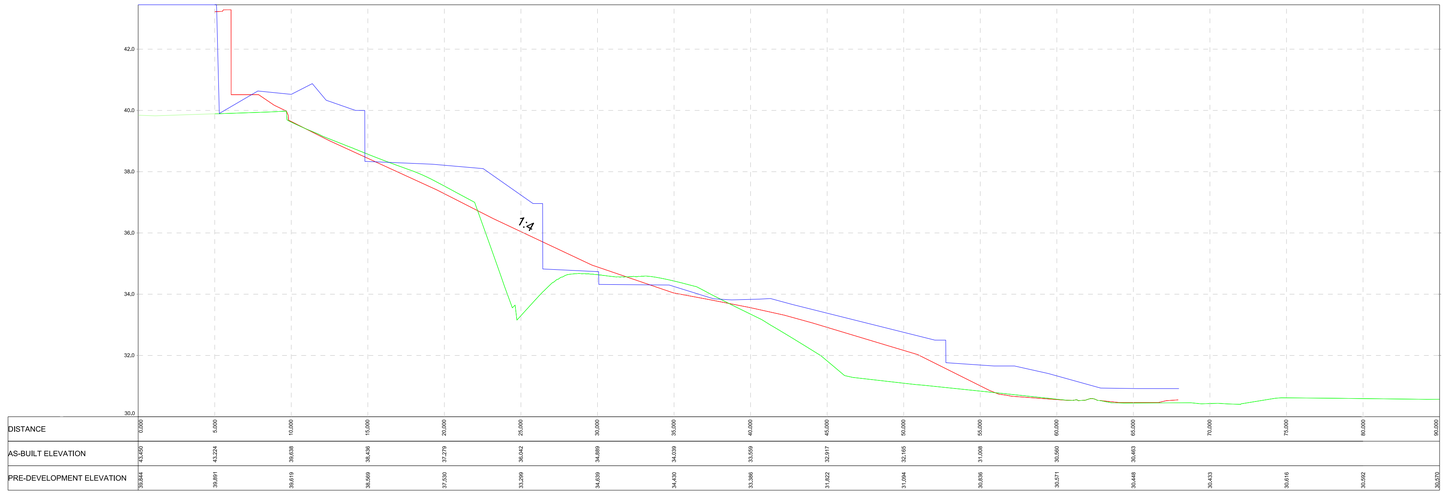
10. Refer to VNIF-BNL-ZZ-YYY-MS-W-0003 Invasive Species Management Plan for details of invasive species removals.

Key

- Extent of Infrastructure Works
- Plot Boundary

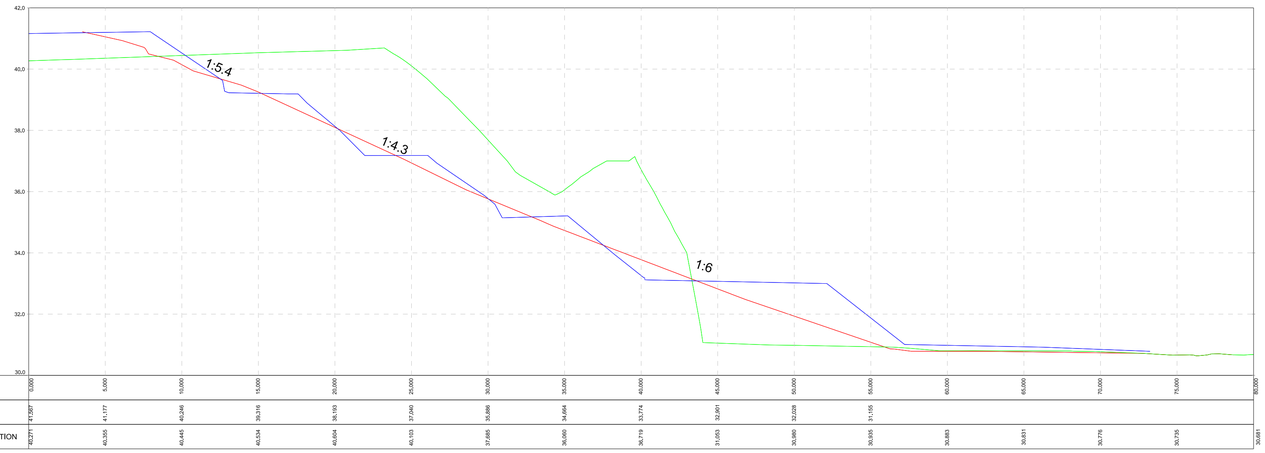
Existing features which have been removed

- Hardstanding and Below Ground Features
- Large Areas of Hardstanding or Surfacing
- Above Ground Features
- Surface debris
- Fencing
- Private / other drainage features
- Electricity 6-6.6kV
- Electricity Low Voltage
- FND Foundation
- DP Draw Pit
- LP Lighting Post
- RW Retaining Wall



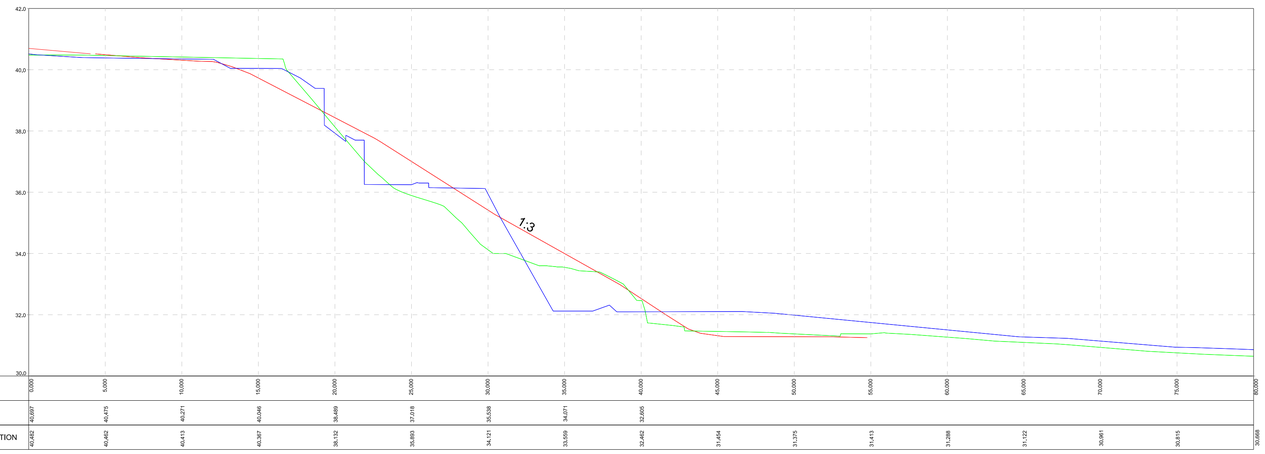
DISTANCE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000
AS-BUILT ELEVATION	43.630	43.224	38.838	36.436	37.279	36.042	34.889	34.039	33.559	33.917	32.165	31.838	30.560	30.483				
PRE-DEVELOPMENT ELEVATION	39.844	39.891	39.419	36.989	37.530	33.299	34.639	34.430	33.396	31.822	31.094	30.836	30.571	30.448	30.423	30.616	30.592	30.570

Section A-A
Scale H: 1:200, V: 1:100



DISTANCE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000
AS-BUILT ELEVATION	41.297	41.177	40.246	39.316	38.193	37.040	35.866	34.664	33.774	32.901	32.028	31.155					
PRE-DEVELOPMENT ELEVATION	40.277	40.335	40.445	40.539	40.604	40.103	37.685	36.069	34.719	31.053	30.980	30.930	30.883	30.831	30.778	30.735	30.681

Section B-B
Scale H: 1:200, V: 1:100



DISTANCE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000
AS-BUILT ELEVATION	42.697	43.475	43.271	43.046	38.489	37.018	35.538	34.071	32.955								
PRE-DEVELOPMENT ELEVATION	42.442	42.462	43.413	43.367	38.132	36.803	34.721	33.559	32.462	31.454	31.375	31.413	31.288	31.122	30.961	30.815	30.668

Section C-C
Scale H: 1:200, V: 1:100

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

Notes

1. Profiles based on:
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
2. Do not scale from this drawing. If in doubt, please consult the engineer.
3. All dimensions are in metres unless stated otherwise.
4. All levels are in metres above Ordnance Datum.
5. Refer to drawing VNIF-ARP-ZZ-YYY-DR-CE-0016 for location of sections.

Key

- Pre-development surface
- As-Built Surface
- Indicative Final Scheme Proposed Surface (to be built under subsequent contract)

Rev	Date	Description	By	Chkd	Appd	Auth
P01	03/02/23	Draft issue for comment	OM	CR	RG	—
P02	31/05/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P03	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	LC
P04	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

AS-Built Red Bank Terrace Regrading
Cross Sections
Sheet 1 of 2

Scale at A1	1:200	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF - ARP - ZZ - YYY - DR - CE - 0014

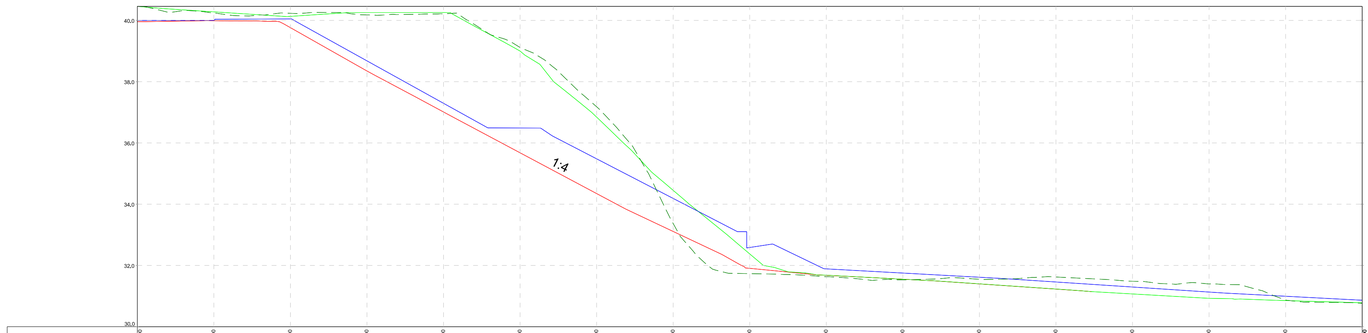
Project | Originator | Volume | Location | Type | Role | Number

Do not scale

© Arup

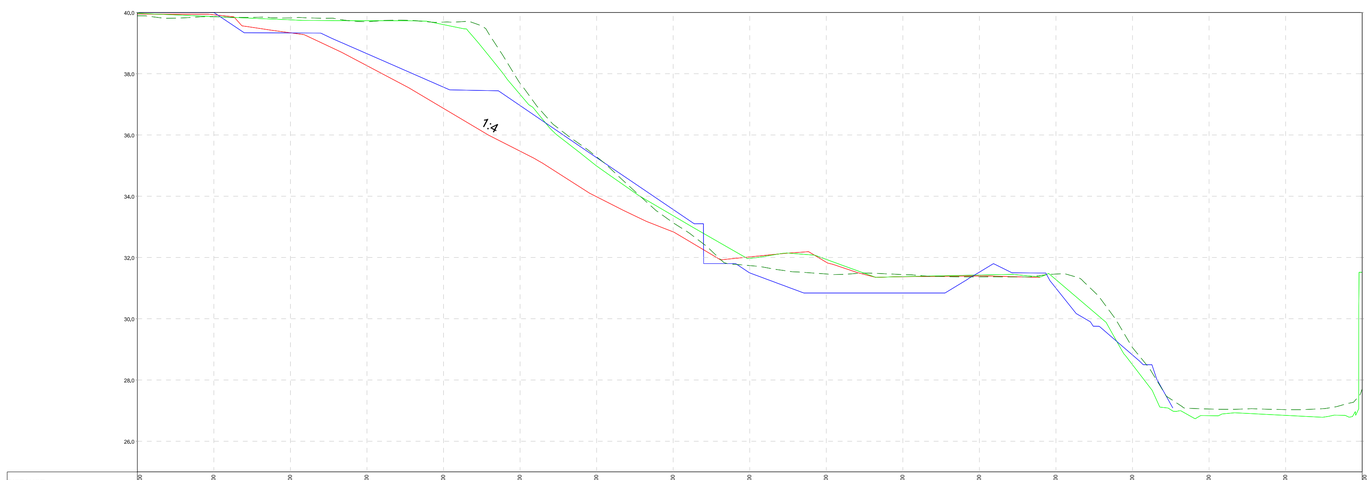
A1

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.



DISTANCE	0,000	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000	60,000	65,000	70,000	75,000	80,000
AS-BUILT ELEVATION	40,000	40,000	39,797	38,498	37,076	35,743	34,499	33,130									
PRE-DEVELOPMENT ELEVATION	40,438	40,280	40,131	40,256	40,256	38,999	36,844	34,452	32,337	31,815	31,602	31,405	31,233	31,090	30,955	30,893	30,913

Section D-D
Scale H: 1:200, V: 1:100



DISTANCE	0,000	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000	60,000	65,000	70,000	75,000	80,000
AS-BUILT ELEVATION	40,000	39,866	39,338	38,143	36,727	35,312	33,897	32,454									
PRE-DEVELOPMENT ELEVATION	39,974	39,866	39,731	39,743	39,538	37,338	34,087	33,364	31,982	31,569	31,522	31,465	31,199	28,668	27,024	27,059	

Section E-E
Scale H: 1:200, V: 1:100

Notes

1. Profiles based on:
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
2. Do not scale from this drawing. If in doubt, please consult the engineer.
3. All dimensions are in metres unless stated otherwise.
4. All levels are in metres above Ordnance Datum.
5. Refer to drawing VNIF-ARP-ZZ-YYY-DR-CE-0016 for location of sections.

Key

- Pre-development surface
- As-Built Surface
- Indicative Final Scheme Proposed Surface (to be built under subsequent contract)
- Pre-development surface (1m Lidar)

Rev	Date	Description	By	Chkd	Appd	Auth
P01	03/02/23	Draft issue for comment	OM	CR	RG	—
P02	31/05/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P03	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	LC
P04	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built Red Bank Terrace Regrading
Cross Sections
Sheet 2 of 2

Scale at A1	1:200	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF	- ARP -	ZZ	- YYY -	DR	- CE -	0015
Project	Originator	Volume	Location	Type	Role	Number

Do not scale

© Arup

A1

N

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

ST THOMAS PLACE
BACK BANK STREET
HONEY STREET
RED BANK
STOCKS S
STAN
Works
LB
PH
Builders Yard
arehouse
RED BANK
CRABBE STREET
CHASE STREET
Viaduct
Caravan Site
DAN

RB01
RB02
RB03
RB06
RB07
RB08
RB11
RB12a
RB12b
RB16
NT02

A-A 0014
B-B 0014
C-C 0014
D-D 0015
E-E 0015
F-F 0017
G-G 0017

0 5 10 15 20 25
SCALE 1:500m

Notes

1. All dimensions are in mm, all levels in mAOD, unless specified otherwise.
2. This map is reproduced from Ordnance Survey Material with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office (c) Crown Copyright. License Number 100019568 (2025).
3. Layout is based on:
   - Plot boundaries developed in conversation with FEC Winter 2021/2 - boundaries between adjacent plots are indicative only and are subject to change as the FEC masterplan is developed.
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Landscape Architect As-Built masterplan drawing VNIF-PLA-ZZ-YYY-DR-L-1011 received 27/07/2026 by Planit.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
4. Drawing to be read in conjunction with the Victoria North HIF Infrastructure Works, Earthworks Specification, ref VNIF-ARP-ZZ-YYY-SP-CG-0004.
5. Refer to drawings VNIF-ARP-SS-YYY-DR-CE-0014, 0015 and 0017 for cross sections.
6. Plot boundaries are indicative based on FEC masterplan.

Key

- Extent of Infrastructure Works
- Plot Boundary
- As-Built Major Contour (1.0m interval)
- As-Built Minor Contour (0.2m interval)

Rev	Date	Description	By	Chkd	Appd	Auth
P01	03/02/23	Draft issue for comment	OM	CR	RG	—
P02	01/06/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P03	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	LC
P04	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built
Earthworks Cross Sections Plan

Scale at A1	1:500	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF	- ARP -	ZZ	- YYY -	DR	- CE -	0016
Project	Originator	Volume	Location	Type	Role	Number

Do not scale

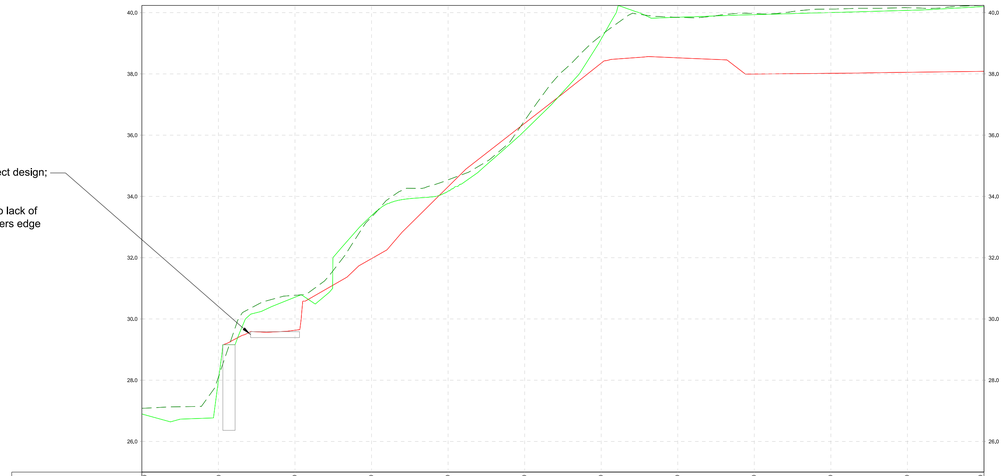
© Arup

A1

As-built information interperated from:
- BAM Topo Survey 'VNIF Master As-Built Rev.6' received 28-07-2026.

Modelled footpath based on landscape architect design; see VNIF-PLA-ZZ-YYY-DR-L-3115.

Any discrepancies in modelled surfaces due to lack of more detailed survey information along the rivers edge which has constrained access.



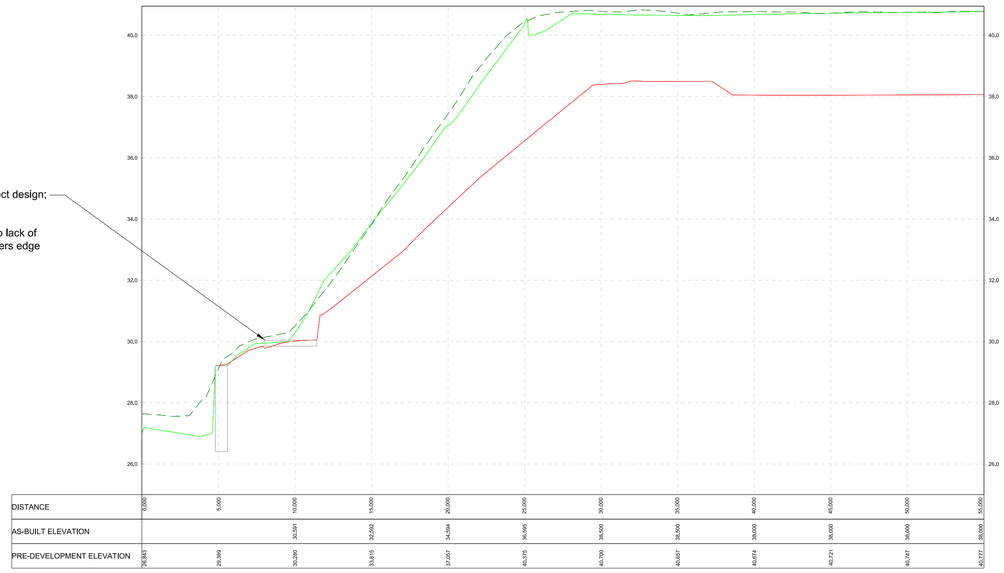
DISTANCE	0,000	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000
AS-BUILT ELEVATION			29,831	31,969	34,317	36,396	38,351	38,525	38,000	38,000	38,000	38,000
PRE-DEVELOPMENT ELEVATION	26,996	29,155	30,713	33,376	34,340	36,145	39,141	39,985	39,955	40,003	40,075	45,000

CH 474.043

Section F-F
Scale H: 1:200, V: 1:100

Modelled footpath based on landscape architect design; see VNIF-PLA-ZZ-YYY-DR-L-3115.

Any discrepancies in modelled surfaces due to lack of more detailed survey information along the rivers edge which has constrained access.



DISTANCE	0,000	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000
AS-BUILT ELEVATION			30,591	32,992	34,994	36,995	38,000	38,000	38,000	38,000	38,000	38,000
PRE-DEVELOPMENT ELEVATION	26,843	29,389	30,280	33,815	37,057	40,375	40,700	40,657	40,674	40,721	40,747	45,777

CH 422.867

Section G-G
Scale H: 1:200, V: 1:100

Notes

1. Profiles based on:
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
   - Topographical Survey drawing VNIF Master As-Built Rev.6 by BAM received 28/07/2026.
2. Do not scale from this drawing. If in doubt, please consult the engineer.
3. All dimensions are in metres unless stated otherwise.
4. All levels are in metres above Ordnance Datum.
5. Refer to drawing VNIF-ARP-ZZ-YYY-DR-CE-0016 for location of sections.

Key

- As-Built Surface
- As-Built Riverside Footpath
- Pre-development surface (Topo Survey)
- Pre-development surface (1m Lidar)

Rev	Date	Description	By	Chkd	Appd	Auth
P01	31/05/23	HIF Lite Full Issue	AS	AL	CR	—
C01	12/10/23	HIF Lite Full Issue	AS	AL	CR	RC
P02	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	—
C02	29/01/24	Updated to suit BAM/Pell comments 25/01/2024	AS	EF	EF	LC
P03	21/08/26	As-Built Issue	AS	ES	ES	—
C03	24/08/26	As-Built Issue	AS	ES	ES	AL

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Client

MANCHESTER CITY COUNCIL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

As-Built Plot RB02 and RB03 Regrading Cross Sections

Scale at A1	1:200	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	CR- Construction Record		

Rev	By	Chkd	Appd	
C03	AS	ES	ES	AL
	Date 21/08/26	Date 21/08/26	Date 21/08/26	24/08/26

Name

VNIF - ARP - ZZ - YYY - DR - CE - 0017

Project | Originator | Volume | Location | Type | Role | Number

Do not scale

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Appendix A

MMP declaration

DoW CoP
Sustainable Reuse of Soils
A CL:AIRE Initiative

2023-12-22 11:04:59

Definition of Waste Code of Practice Declaration Receipt

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

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

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

This receipt relates to the following Declaration -

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

2. Proposed Volumes	
Proposed Volumes in m^3	353163
Additional comments on Proposed Volumes	

3. Site of Origin	
3a. Route A: Land affected by contamination or suspected of being affected by contamination	Checked
3b. Route B: Land not suspected of being affected by contamination.	N/A
Site Address	BAM Nuttall, Hargreaves Street, Manchester
Postcode for Site of Origin	M4 4EJ

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Company Registration No. 13628954
dowcop.declarations@claireinitiatives.com

Grid Reference for Site of Origin	SJ 84469 99415
3d. Site Owner(s)	
Site Owner #1	
Name	NETWORK RAIL INFRASTRUCTURE LIMITED
Address	Far East Consortium Second Floor, Northern Assurance Building 9-21 Princess Street Manchester M2 4DN NR registered company office address: 1 Eversholt Street, London NW1 2DN
Email	enquiries@fecil.uk
Telephone	+44 (0) 161 870 0400
3e. Developer	
Developer #1	
Company	BAM Nuttall
Address	BAM Nuttall Site Compound Hargreaves Street, Manchester, M4 4EJ
Contact Name	Liam Chambers
Job Title	Site Agent
Email	[redacted]
Telephone	

6. Local Authorities / Regulators	
6a. Local Authorities	
Local Authority #1	
Receiver Site Local Authority	Manchester City Council
Local Authority Address	Contaminated Land Officer Environmental Protection Section Environmental Health Neighbourhoods Directorate Manchester City Council
Lead Contact Name	Laura Miller
Lead Contact Role	Environmental Protection Officer
Lead Contact Address (if different from above)	n/a

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Lead Contact Email	[redacted]
Lead Contact Telephone	
Receiver Site Agency	Warrington
Agency Address	Environment Agency Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT
Contact Telephone	07717344174
Contact Email	SPPlanning.RFH@environment-agency.gov.uk

7. Lines of Evidence	
Reference for the Materials Management Plan	LKC22 1587_Victoria North Infrastructure_MMP
Reference for the Risk Assessment	Arup (2023) Victoria North HIF Infrastructure Works. Controlled waters Detailed Risk Assessment. BAM Nuttall Ltd. Reference: VNIF-ARP-ZZ-YYY-RP-CG-1000 MMP Victoria North HIF Infrastructure Work Appendix C3
Reference for either Remediation Strategy or Design Statement	Remediation Strategy: Arup (2023) Phase 1 Remediation Implementation and Verification Plan. BAM Nuttall Ltd. Reference: VNIF-ARP-ZZ-YYY-RP-CG-0017 MMP Victoria North HIF Infrastructure Works Appendix C1 LK Consult (2023)Victoria North Infrastructure Work. Phase (Pre-development) Remediation Strategy. Bam Nuttall Ltd. LKC 22 1587. MMP Victoria North HIF Infrastructure Works Appendix C2
Reference for the Verification Plan	Verification Plan: Arup (2023) Phase 1 Remediation Implementation and Verification Plan. BAM Nuttall Ltd. Reference: VNIF-ARP-ZZ-YYY-RP-CG-0017 MMP Victoria North HIF Infrastructure Works Appendix C1
Company	BAM Nuttall Ltd.
Address	BAM Nuttall Site Compound, Hargreaves Street, Manchester, M4 4EJ

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Name	Liam Chambers
Email	[redacted]
Telephone	
Expected production date for the Verification Report.	2024-07-05 00:00:00
7gi. Location plans	LKC22 1587_Victoria North Infrastructure_MMP Supporting documents: MMP Victoria North HIF Infrastructure Works Appendix A1 - Arup 2023, Figure 1 Victoria North Site Zones Plan.
7gii. Schematics	MMP Victoria North HIF Infrastructure Works Appendices: Appendix A2 - Arup 2023, Proposed HiF Lite Site Isopach. Reference: VNIF-ARP-00-YYY-DR-CE-0002 Appendix A3 - Arup 2023, Proposed HiF Lite Site Contours. Reference: VNIF-ARP-00-YYY-DR-CE-0001 Appendix A4 - Approximate Location and Extent of Historic Constraints, Arup 2023. Reference: VNIF-ARP-00-YYY-DR-CE-0005 Appendix A5 - Arup 2023, Extent of Temporary Stockpiling Area. Reference: VNIF-ARP-00-YYY-DR-CE-0012
7giii. Desk Top Study	MMP Victoria North HIF Infrastructure Works Appendix C6 Desk Study :Arup (2019) Northern Gateway, Ground Conditions Desk Study Reference: MNG-ARP-SW-RP-CG-102
7giv. Mass balance calculations	MMP Victoria North HIF Infrastructure Works Appendix B1: Cut Fill check with Disposal
7gv. Contingency arrangements	MMP Victoria North HIF Infrastructure Works & Arup (2023) Phase 1 Remediation Implementation and Verification Plan. BAM Nuttall Ltd. Reference: VNIF-ARP-ZZ-YYY-RP-CG-0017 MMP Victoria North HIF Infrastructure Works Appendix C1-Remediation Implementation and Verification Plan
7gvi. Tracking system	MMP Victoria North HIF Infrastructure Works Appendix E1 - Example Material Tracking Sheet

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Additional Documentation #1	
Document Type	Ground Investigation Report
Document Reference	MMP Victoria North HIF Infrastructure Works Appendix C5 GIR : Arup (2022) Victoria North Infrastructure Works Ground Investigation Interpretative Report. BAM Nuttall Ltd. Reference: VNIF-ARP-ZZ-YYY-RP-CG-0012
Additional Documentation #2	
Document Type	PFAS investigation Report
Document Reference	MMP Victoria North HIF Infrastructure Works Appendix C6 PFAS Investigation Report: BAM ritches (2023) Victoria North HiF Infrastructure & Enabling Works – PFAS Investigation. Ground Investigation Report – Factual Account
Additional Documentation #3	
Document Type	Earthworks Specification
Document Reference	MMP Victoria North HIF Infrastructure Works Appendix C4: Earthworks Specification Arup (2023) Victoria North HIF Infrastructure & Enabling Works Specification for Highway Works - Civil Infrastructure. BAM Nuttall Ltd Reference: VNIF-ARP-ZZ-YYY-SP-C-001
a) The Local Authority	Checked
b) Environment Agency	Checked
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Reference the correspondence with the Local Authority	MMP Victoria North HIF Infrastructure Works Appendix D1: Email correspondence from Peter Dunn LK Consult Group to Laura Miller Environmental Protection Officer, Manchester City Council dated 12 December 23

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Reference the correspondence with the Environment Agency	MMP Victoria North HIF Infrastructure Works Appendix D2 : Email evidence from Environment Agency Lee Beveridge Technical Specialist to Liam Chambers (BAM) and Peter Dunn (LK Group), dated 21 December 2023. The ES has no objections to materials use providing that the DoWCoP is followed in full.
I have reviewed the planning consent including planning conditions	Checked
Planning Reference (State either the reference or Not Applicable.)	133143/VO/2022
a) The Local Authority	Checked
b) Environment Agency	Checked
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Please list correspondence reviewed above	MMP Victoria North HIF Infrastructure Works Appendices: Appendix D3: Planning Decision Manchester City Council dated 25/05/2023 Appendix D4: Discharge of Condition 7A (Ground Conditions) attached to Planning Permission 137079/JO/2023. Letter from Environment Agency to Manchester City Council 07/12/2023
Planning consent not required	N/A

8. QP Declaration	
8a. QP Name	Clare McGuigan
8b. QP Number	QP297
8c. I satisfy the Qualified Person requirements set out in Appendix 6 of the Definition of Waste: Development Industry Code of Practice to complete this Declaration.	Checked
8d. I have reviewed the Materials Management Plan for the above project.	Checked
8e. I have reviewed the Risk Assessment.	Checked

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

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Appendix B

Previous technical notes

B.1 500 Series Ground Investigation Interpretation

ARUP

Technical Note

Project title	Victoria North
Job number	282022-00
File reference	
cc	
Prepared by	Lottie Harold
Date	30 January 2024
Subject	500 Series Ground Investigation Interpretation

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1. Introduction

1.1 Context

As part of the Victorian North Phase 1 HIF scheme, Arup was commissioned by BAM Nuttall Ltd to produce a remediation implementation and verification plan (RIP)[1], based on a remediation strategy from LK Group Ltd.[2]. The RIP and Remediation Strategy have been accepted by the Local Planning Authority and their statutory consultees, to allow the discharge of planning condition 7a, relating to ground contamination.

The agreed RIP provisionally identified a number of remediation areas within the site, with remediation required primarily to protect controlled waters.[1] No further ground investigation was required in the area of the carriage shed. Section 5.2 of the RIP proposed a programme of additional trial pitting to further delineate the following remediation areas:

- As required by the Environment Agency, a programme of trial pitting to identify whether PFAS is present in the gas works remediation area.
- A programme of trial pitting with analysis primarily for PFAS compounds, to further delineate the TP422/TP423 remediation area.
- Further investigation adjacent to TP405A (excavated in March 2023), to validate the findings of previous laboratory PFAS analysis in a sample recovered from 2.0m below ground level (bgl).

Figure 4 of the RIP proposed a series of 12 trial pits covering the former gas works and TP422/TP423 remediation areas. The proposed trial pit distribution was based on a 25m grid herringbone arrangement, with additional targeted locations. Additional trial pits were to be excavated in the area adjacent to TP405A. This additional investigation was undertaken in November 2023 (the November 23 GI) by BAM Ritchies (BAM). BAM have provided a factual report [3] which at the time of producing this interpretation, is in draft form.

[1] Risks to human health are to be addressed during phases of post-remediation development, for example by the provision of clean cover soils in areas of soft landscaping.

This technical note summarises the findings of the November 23 GI and provides an interpretation of relevant data from all phases of ground investigation that have been undertaken at the site to further determine the scope of the Phase 1 remediation.

1.2 Remediation areas

Contamination linkages identified in an updated DQRA [4] and 2023 human health risk assessment [5] were used in a preliminary determination of remediation areas, as proposed on Figure 2 of the RIP (reproduced as Preliminary assessment of extent of remediation areasError! Reference source not found. below). Excluding the carriage shed area, the factors that led to the identification of these remediation areas are discussed below.

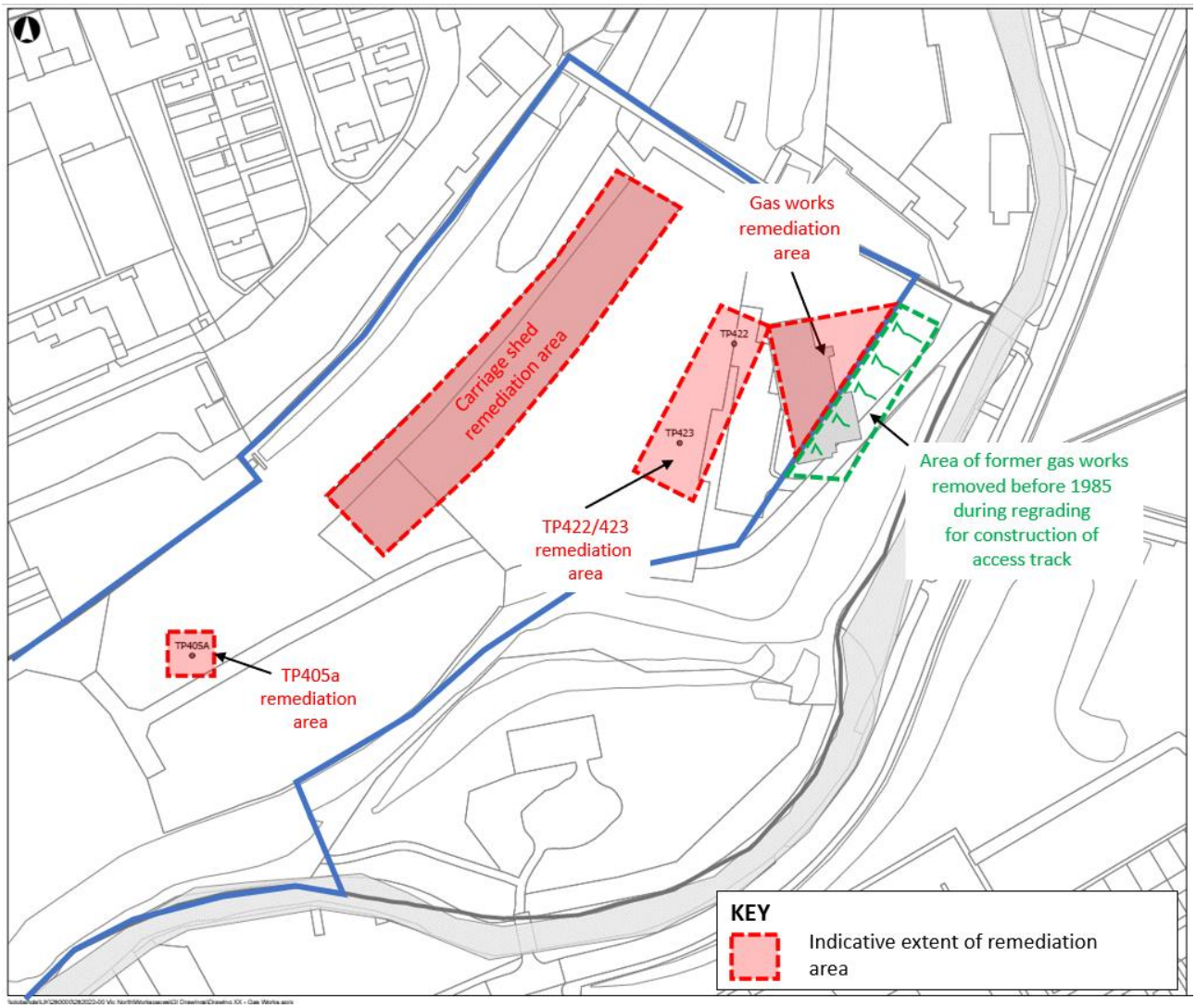


Figure 1: Preliminary assessment of extent of remediation areas. The Phase 1 boundary is shown in blue (from Fig. 2 of the RIP)

1.2.1 Gas works remediation area

The gas works is located over the Collyhurst Sandstone principal aquifer. Previous phases of investigation identified contaminants of concern which included selected TPH fractions and PAH. Previous investigations did not include PFAS testing at the former gas works area and the EA requested that this was addressed.

1.2.2 TP422/TP423 remediation area

An area of elevated PFAS concentrations has been identified in TP422 and to a lesser extent, in TP423, extending to a depth of c. 2.0m to 2.5m in TP422. This contamination was identified as presenting the following potential risks:

- Potential human health risks: human health risk assessment [5] concluded that the soil tested from TP422 contains perfluoroalkyl carboxylic acids (PFCAs) marginally in excess of the human health criteria for residential developments.
- Potential controlled waters risks:
    - leachable concentrations of PFOA in excess of appropriate drinking water standards were recorded in TP422,
    - leachable concentrations of both PFOS and PFOA in excess of appropriate surface water standards were recorded in TP422 and TP423[4].

The proposed additional ground investigation was undertaken to further delineate the lateral extent of contamination in the area of TP422 and TP423.

1.2.3 TP405A

During ground investigation in March 2023, elevated leachable PFAS concentrations were identified in a deep sample (2mbgl) in this exploratory hole [4]. Shallow samples from TP405A had not been impacted. On the basis that the source of PFAS in this area of the site was from the surface, no clear source-pathway-receptor (S-P-R) linkage could be identified that would lead only to the presence of elevated PFAS concentrations at depth. Additional trial pitting was therefore undertaken in November 2023 to further assess the potential PFAS hazard at this location.

1.2.4 Area adjacent to the gas works remediation area

In the RIP, the Phase 1 HIF Infrastructure Works boundary had been defined as the crest of the wooded slopes to the east of the gas works area (**Figure 1**). Following subsequent discussions with the EA, the Phase 1 boundary has been amended to correspond with the alignment of the access track that runs through this area of the site. As a result of this amendment to the Phase 1 boundary, the annotations in green on **Figure 1** are no longer relevant.

2. Ground investigation

The November 2023 GI was carried out between 7th and 9th November 2023. The works were supervised by BAM Ritchies with part-time site attendance by Arup. The findings of the investigation are presented in a factual report by BAM Ritchies [3].

The fieldwork consisted of:

- 15 no. trial pits labelled TP501 to TP512, and TP405B to TP405D, excavated to a maximum depth of 3.6 mbgl;
- Soil samples were recovered at depths of approximately 0.5m, 1.5m and 2.5m, and water samples were recovered where possible, when shallow groundwater was encountered;

- Laboratory testing on selected soil samples for a suite of 18 PFAS compounds (solid-phase analysis only);
- Laboratory testing on selected soil samples where visual/olfactory evidence of potential contamination was identified. Analysis for metals, PAH, TPH CWG and BTEX, and VOCs and SVOCs;
- Leachability testing on selected soil samples from TP405B, TP405C and TP405D for a suite of 18 PFAS compounds;
- Laboratory testing on a sample of shallow groundwater recovered from TP506 for a suite of 18 PFAS compounds;
- Laboratory testing on a sample of mains water for PFAS. This was because mains water was used to wash the excavator bucket between trial pits, to minimise the risk of PFAS cross-contamination.

Throughout the November 23 GI, precautions were taken to minimise the risk of PFAS cross-contamination (as described Appendix C of the RIP). These precautions included the use of a stainless-steel sampling trowel, wearing clean nitrile gloves, washing sampling equipment with deionised water between each sample, washing the excavator bucket between trial pit with mains water, only using HDPE bailers and sampling containers, and avoiding the use of certain types of marker pens which may include PFAS in the ink.

As-dug trial pit locations are shown on **Figure 2**.

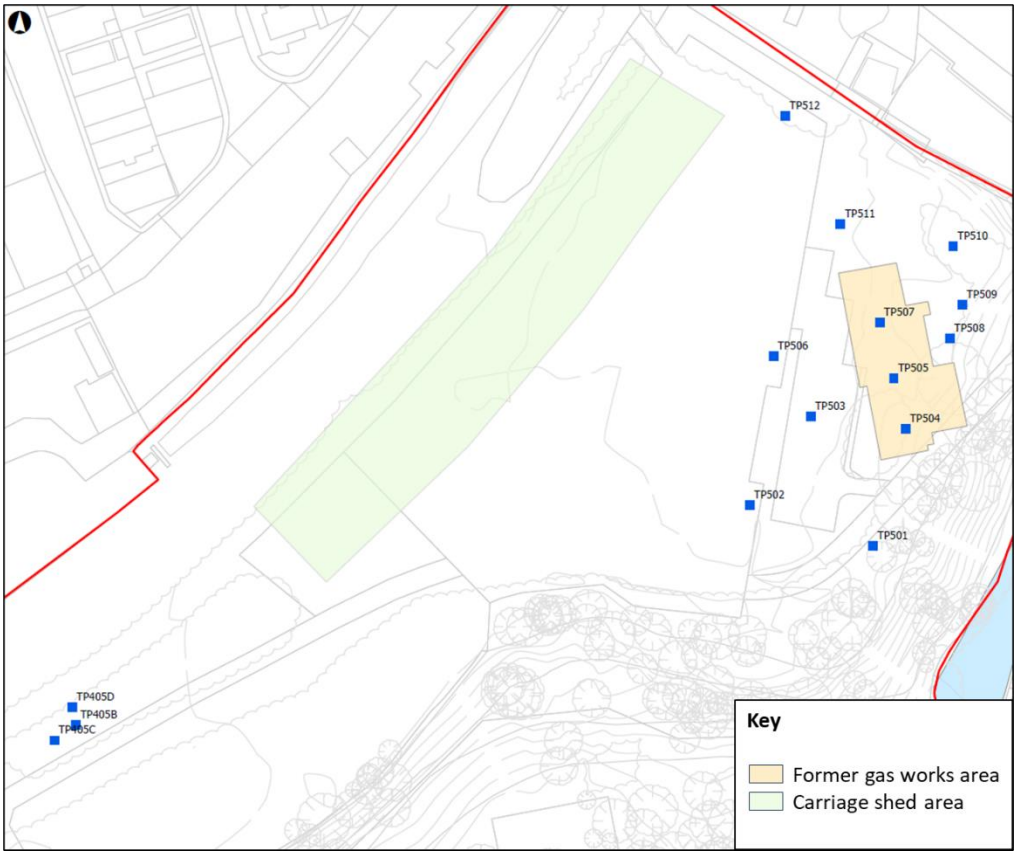


Figure 2: November 23 GI - trial pit locations (as dug)

3. Ground conditions

Details of the ground conditions encountered are provided in the relevant trial pit logs [3].

As reported during previous phases of ground investigation, made ground was found to be predominantly granular, consisting of dark grey sandy silty gravel or dark brown gravelly silty sand, at the surface. Gravel consisted of ash, mudstone, sandstone, limestone, slate, timber, concrete, clinker and slag and cobbles of sandstone, brick and slag. Cohesive lenses of stiff pale brown slightly gravelly sandy clay containing gravels and cobbles of sandstone, mudstone and brick were encountered in some trial pits, with the thickest recorded as 2.5m. The base of made ground was not encountered in any of the 500 series trial pits.

During the ground investigation, shallow groundwater was encountered at varying depths as listed in **Table 1**.

Table 1. Summary of groundwater encountered (November 23 GI)

Location ID	Groundwater strike depth (mbgl)	Groundwater strike elevation (mOD)	Strata	Comments
TP405D	0.65	40.86	Made ground (gravel)	Seepage – insufficent to sample
TP503	2.6	40.5	Made gound (sand)	Sampling of shallow groundwater was not possible because water ingress led to instability of excavation
TP506	3.2	40.0	Made ground (clay)	Sample recovered
TP509	2.6	38.8	Made ground (clay)	Seepage – insufficent to sample
TP511	0.8	42.3	Made ground (clay)	Shallow groundwater on cohesive made ground – insufficient to sample

3.1 Visual and olfactory evidence of contamination

A summary of visual and olfactory evidence of contamination identified during the November 23 GI is presented in **Table 2.**

Table 2. Visual and olfactory evidence of contamination encountered during excavation (November 23)

Location ID	Evidence of contamination	Relevant ground conditions	PID readings (ppm)	Sample taken for analysis (Y/N)
TP506	Discoloured soil sampled from stockpile	Not observed in excavation	No data	Y
TP507	General hydrocarbon odour at 1.1 – 2.4mbgl.	Odour only (no visual indication) in clayey sand (made ground)	All PID readings zero	Y

Location ID	Evidence of contamination	Relevant ground conditions	PID readings (ppm)	Sample taken for analysis (Y/N)
TP509	Sheen on slight ingress of groudwater at 2.6mbgl.	Gravelly clay (made ground)	All PID readings zero	N
TP510	Moderate hydrocarbon odour and sheen in soils from between 2.2m and 2.8mbgl. The trial pit was terminated at 2.8m bgl.	Gravelly clay (made ground)	PID at 2.5m = 96.9 ppm	Y
TP511	Strong hydrocarbon odour and sheen in soils between 2.4m and 2.6mbgl. The trial pit was terminated at 2.6m bgl.	Gravelly clay (made ground)	PID at 2.5m = 29.5 ppm	Y

4. Results of PFAS analysis

4.1 Soil samples (solid phase)

Forty-four soil samples (solid phase) underwent analysis for a suite of 18 PFAS compounds, with at least two samples tested from each trial pit.

The results of this analysis are given in the factual report [3] and summarised in Appendix A. In the majority of cases, the eighteen PFAS compounds tested for were found not to exceed the laboratory limits of detection (LODs). LODs were however, exceeded in the following shallow samples (**Table 3**).

Table 3. November 23 GI: Soil samples exceeding limit of detection

Trial pit	LOD	TP502	TP510	TP511
Depth	-	0.2m	0.3m	0.5m
Total PFOS (µg/kg)	<1 µg/kg	9.16 µg/kg	1.34 µg/kg	1.35 µg/kg

4.2 Leachate testing

In addition to analysis of soil samples (solid phase), leachate analysis was undertaken on samples recovered at depth in the vicinity of the former TP405A. The results of the November 23 leachate analysis testing are given in the factual report [3] and summarised in Appendix B. Generally, the results of analysis were below the relevant limits of detection, however concentrations marginally above the relevant LODs were identified for a number of PFAS compounds, principally associated with TP405B (Table 4. November 23 GI: PFAS analysis of leachate samples**Table 4**).

Table 4. November 23 GI: PFAS analysis of leachate samples

Trial pit	LOD	TP405B	TP405B	TP405C	TP405D
Depth (m)	-	2.0m	2.5m	2.5m	2.5m
PFBA (ng/l)	2.0	<LOD	2.37	<LOD	<LOD

Trial pit	LOD	TP405B	TP405B	TP405C	TP405D
PFPA (ng/l)	1.0	<LOD	1.37	<LOD	<LOD
PFHxA (ng/l)	1.0	<LOD	1.54	<LOD	<LOD
PFOA (ng/l)	0.65	<LOD	1.37	1.51	<LOD
PFOS (linear and branched) (ng/l)	0.65	<LOD	<LOD	<LOD	<LOD

4.3 Water samples

Although a number of instances of shallow groundwater were encountered during the November 23 GI, only one sample could be recovered that was suitable for analysis (from TP506, 3.2m bgl - **Table 1**). The majority of the PFAS compounds tested (10 of 18 compounds) were found to be below the relevant limit of detection. The PFAS compounds that were found to exceed the relevant LOD are summarised in **Table 5**.

Table 5. PFAS analysis data for shallow groundwater in TP506 (November 2023)

Water sample	LOD	TP506
Depth (m)	-	3.2m
PFBA (ng/l)	2.0	29
PFPA (ng/l)	1.0	19
PFHxA (ng/l)	1.0	22
PFBS (ng/l)	1.0	15
PFHpA (ng/l)	1.0	28
PFOA (ng/l)	0.65	54
PFOS (linear and branched) (ng/l)	0.65	12

A control sample of mains water from the water bowser used to clean the excavator bucket was also tested for PFAS to ensure any contamination of samples had not been introduced during the cleaning process. All PFAS compounds were below the limit of detection except for PFOA which was at the limit of detection.

5. Non-PFAS contaminants

Chemical analysis for non-PFAS contaminants was undertaken on four soil samples, driven by observations of visual and olfactory evidence on site (**Section 3.1**). The results of this analysis are presented in the factual report [3]. All four samples were recovered from the general gas works area.

Based on the findings of all phases of GI that had been undertaken prior to November 2023, the Updated DQRA[4] identified a number of contaminants of concern in the gas works area that would need to be addressed by remediation. By extension, for all other contaminants (i.e. those not identified as contaminants of concern), the maximum concentrations identified by the various phases of ground investigation that had been undertaken were not considered to represent a risk to controlled waters.

To assess the significance of the November 2023 non-PFAS analysis data and to identify the potential presence of additional contaminants of concern, the November 23 data was screened as follows:

- Primary screen for contaminants of concern: against the agreed verification criteria for gas works remediation identified in the Updated DQRA [4] and Table 1 of the agreed RIP [1].
- Secondary screen for other contaminants (excluding contaminants of concern): against the maximum values identified across the entire site by previous phases of ground investigation.

The results of this screening are presented in Appendix C1 and summarised in **Table 6** and **Table 7**

Table 6. Results of primary screening of non-PFAS contaminants against verification targets (November 2023 GI – Appendix C1)

Determinand	Verification target (mg/kg)	TP506 SP*	TP507, 1.4m	TP510, 2.5m	TP511, 2.5m
Benzo(a)pyrene	3.6 mg/kg	No exceedence	6.2 mg/kg	6.2 mg/kg	5.3 mg/kg
Anthracene	1.8 mg/kg	No exceedence	No exceedence	9.8 mg/kg	9.0 mg/kg
Fluoranthene	7.0 mg/kg	No exceedence	No exceedence	9.9 mg/kg	11.1 mg/kg
TPH C8-C35	1000 mg/kg	No exceedence	No exceedence	1260 mg/kg	2060 mg/kg

Table 7: Results of secondary screening of non-PFAS contaminants against maximum values identified during previous GI (November 2023 GI – Appendix C2)

Determinand	Max concentration identified in previous GI	TP506 SP*	TP507, 1.4m	TP510, 2.5m	TP511, 2.5m
Ethylbenzene	340 ug/kg	No exceedence	No exceedence	6,330 ug/kg	No exceedence
o-Xylene	2,130 ug/kg			3,480 ug/kg	No exceedence
Isopropylbenzene	100 ug/kg			955 ug/kg	114 ug/kg
Propylbenzene	200 ug/kg			871 ug/kg	610 ug/kg
1,3,5-Trimethylbenzene	420 ug/kg			1,370 ug/kg	No exceedence
1,2,4-Trimethylbenzene	850 ug/kg			15,700 ug/kg	1,140 ug/kg
4-Isopropyltoluene	200 ug/kg			1,150 ug/kg	No exceedence
n-Butylbenzene	220 ug/kg			373 ug/kg	356 ug/kg
2-Methylnaphthalene	23,800 ug/kg			50,700 ug/kg	No exceedence

*-SP = from stockpile

6. Asbestos

Evidence of asbestos fibres was detected in 3 of 8 samples, with all detections within the former gas works area. Samples which proved positive for asbestos are summarised in **Table 8**.

Table 8. Soil samples in which the presence of asbestos was detected

No. of samples	Exceedances			
	No.	Location ID	Depth (mbgl)	Type
8	3	TP504	1.2	Chrysotile – small fibre bundle in soil
		TP507	2.5	Chrysotile – loose fibres in soil
		TP511	0.5	Amosite – loose fibres in soil

7. Interpretation of the November 23 GI

As discussed above, the November 23 GI formed part of the works prescribed in the agreed RIP. In order to determine the significance of the November 23 data therefore, the results of analysis have been interpreted against the validation and suitability criteria set out in the RIP.

7.1 PFAS: solid phase

Section 7 of the agreed RIP defines the following validation criteria for PFAS in soils at the site:

Table 9: Victoria North PFAS validation criteria [1]

Contaminant of concern	Verification target (mg/kg)	Rationale for verification target
PFPA	<2µg/kg	Requested by EA
PFHxA	<2µg/kg	Requested by EA
PFHpA	<2µg/kg	Requested by EA
6:2-FTS	<2µg/kg	Requested by EA
PFOA	<1µg/kg	Laboratory limit of detection and typical site concentration
PFHxS	<2µg/kg	Requested by EA
PFNA	<2µg/kg	Requested by EA
Total PFOS	<2µg/kg	Laboratory limit of detection and typical site concentration
PFDA	<2µg/kg	Requested by EA

When these criteria are applied to the results of soils analysis summarised in **Table 3**, the only exceedance identified in soil samples analysed during the November 23 GI, was elevated total PFOS (9.16 µg/kg, the sum of linear and branched PFOS) in the shallow sample from TP502 (0.2m bgl - **Figure 2**). Deeper samples recovered from TP502 were found not to contain any PFOS compounds in excess of the relevant LODs.

The November 23 GI data therefore, provides no evidence for the presence of elevated PFAS in the solid phase in:

- The gas works remediation area.
- The TP405A remediation area.

7.2 PFAS: leachability testing.

Acceptable concentrations of leachable PFAS are not defined in the RIP. Leachable PFAS issues were however, considered in the Updated DQRA[4], which assessed data from a phase of PFAS investigation undertaken in March 2023 (the March 23 GI). In the Updated DQRA, very low concentrations of leachable PFAS were identified in shallow made ground which were subject to risk assessment and not considered to present a risk to controlled waters and for which no remedial measures were required. The concentrations of leachable PFAS detected in the samples tested from the November 23 GI were comparable with those detected previously and do not indicate a potential risk to controlled waters.

7.3 PFAS: shallow groundwater

The sample of shallow groundwater encountered at 3.2m bgl in TP506 (**Table 5**) was shown to contain PFAS above relevant LODs for a number of compounds including PFOA and PFOS. The concentrations of PFAS in the latest sample of shallow groundwater are consistent with detectable PFAS concentrations in shallow groundwater from previous ground investigations. Previous risk assessment for PFAS, as presented in the Updated DQRA, has concluded that the concentrations of PFAS in shallow groundwater do not pose an unacceptable risk to controlled waters and no additional remedial action is required.

7.4 Non PFAS contaminants

Of the contaminants of concern for the gas works remediation area identified in the Updated DQRA and RIP, the primary screening for non-PFAS contaminants summarised in **Table 6** identified elevated PAHs, as follows:

- TP507 (1.4m): benzo(a)pyrene only.
- TP510 (2.5m): benzo(a)pyrene, anthracene and fluoranthene.
- TP511 (2.5m): benzo(a)pyrene, anthracene and fluoranthene.

In addition, the primary screening identified elevated TPH (C8 to C35) in TP510 and TP511. In accordance with Table 1 of the agreed RIP, if exceedances of this contaminant of concern are noted, risk-derived criteria for individual carbon bands shall be applied. When the criteria for individual carbon bands are considered (Appendix C1), none of the respective risk-derived criteria are exceeded. On this basis no remedial action is required with respect to TPHCWG hydrocarbons at the location of these exploratory holes.

When the results of the analysis were screened for other non-PFAS contaminants (excluding the contaminants of concern - **Table 7**) the following exceedances were identified:

- TP510 (2.5m) – Ethylbenzene and o-xylene and a number of VOCs/SVOCs (generally benzene and toluene compounds).
- TP511 (2.5m) – a number of slightly elevated VOCs/SVOCs (benzene compounds).

The soil samples in which these hydrocarbon contaminants were identified were cohesive components of the made ground present at the site (**Table 2)**. The Updated DQRA [4] identified that during previous phases of ground investigation, very light hydrocarbons in the range C5-C8 had not generally been detected in the soil at the site. On this basis, the elevated BTEX, SVOC and VOC concentrations identified in TP510 and TP511 are considered to be an isolated hotspot of soil contamination. Remedial excavations will be required

to address the concentrations of PAHs identified in the same samples recovered from these trial pits (2.5m bgl - **Table 6**), which will also remove these other hydrocarbons. On completion, these remedial excavations will undergo verification sampling and analysis. As no remedial targets have been determined for BTEX, SVOCs and VOCs for the site, a separate exercise will be undertaken using the Remedial Targets Methodology (RTM) to assess the significance of the concentrations encountered during the November 2023 GI and to establish appropriate verification targets for these contaminants.

8. Implications of the November 23 GI for remediation

8.1 Gas works remediation area

The November 23 GI has encountered no PFAS contamination in the gas works remediation area. **Figure 3** summarises the contamination from all phases of ground investigation which is considered to present demonstrable risks.

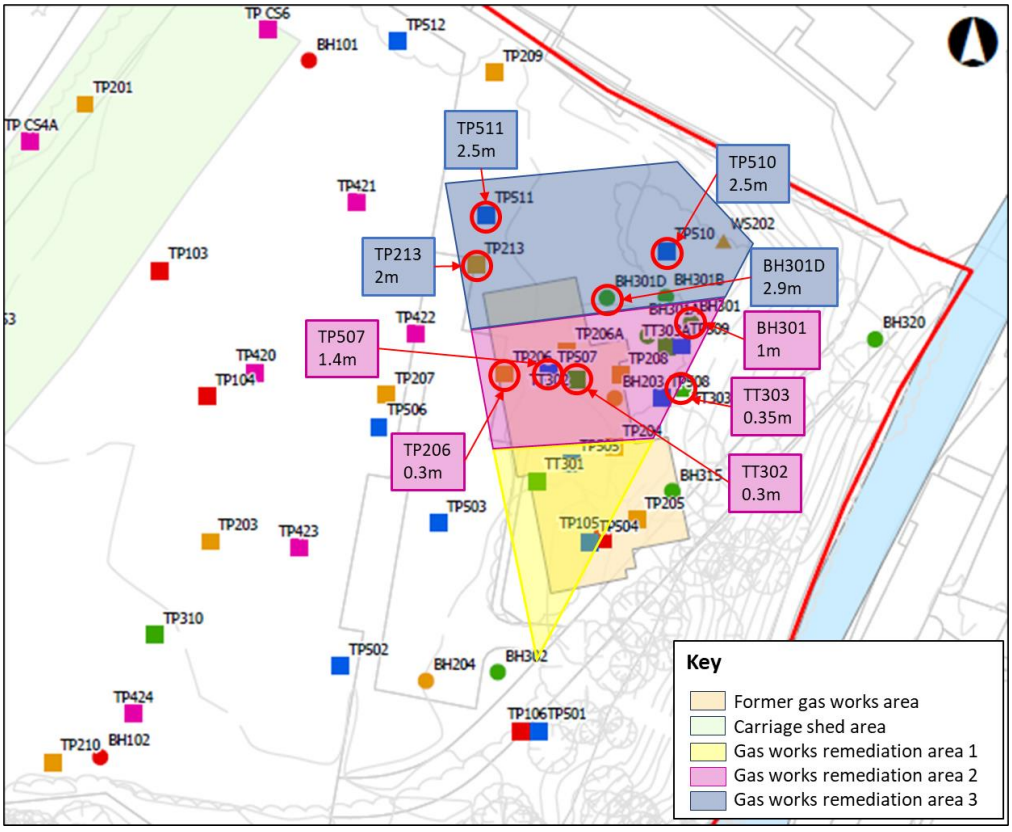


Figure 3: Proposed remedial actions in the gas works remediation area.

The position and depth information summarised on **Figure 3** has been used to identify the following requirements for remediation of the gas works area:

- Gas works remediation area 1. No elevated concentrations of contaminants of concern have been encountered in this area. Remedial works are therefore, limited to the removal of the remains of the former gas works sub-structure.

- Gas works remediation area 2. The presence of contaminants of concern at elevated concentrations has been demonstrated at shallow depth in this area of the former gas works. Remedial excavations are therefore, proposed to depths of 1.5m.
- Gas works remediation area 3. The presence of contaminants of concern at elevated concentrations has been demonstrated at depths greater than 2.0m in this area of the former gas works. Remedial excavations are therefore, proposed to depths of c. 3.0m.

The current remediation proposals assume the eastern limit of the gas works remediation area is defined by the top of the existing wooded slopes. On completion of the remedial excavations in this area, verification sampling will be undertaken in accordance with Section 7.6 of the RIP. As subsequently agreed with the EA however, verification sampling will be undertaken across the gas works remediation area, on the basis of a 15m sampling grid. If the findings of the verification sampling suggest contamination extends down the adjacent wooded slopes, it will be necessary to remove trees before the remedial excavations can be extended to the east.

As shown in **Figure 3**, as a result of the deeper remedial excavation required in TP510, gas works remediation area 3 has been extended to the north, to the crest of the north- and north-east facing slopes along the site boundary. It is proposed that subject to relevant modifications to the masterplan, reinstated ground levels in the north-east of gas works remediation area 3 are lower than original ground levels. The resulting reduction in ground levels will help to address the issues of marginal stability of these northern slopes that were identified in the GIR [6].

The discovery strategy presented in Section 4.13 of the RIP will be implemented throughout the remediation of the former gas works to address unexpected ground contamination issues that come apparent during the works.

8.2 TP422/TP423 remediation area

In order to further delineate the TP422/TP423 remediation area, the data obtained from the November 23 GI has been combined with the data obtained during the March 23 GI and compared with the validation criteria set out in the agreed RIP (Appendix D and **Table 9**).

The following samples exceed the validation criteria that have been set for one or more PFAS compounds (see Appendix D for details):

- TP422, 0.5m.
- TP422, 1.0m.
- TP422, 2.0m.
- TP423, 0.5m.
- TP502, 0.2m.

This data is summarised on **Figure 4** and the relevant position and depth information has been used to identify the following requirements for remediation of the TP422/TP423 remediation area:

- TP423/TP502 area. The presence of contaminants of concern at elevated concentrations has been demonstrated at shallow depth in this area. Remedial excavations are therefore, proposed to depths of 0.5m.
- TP422 area. The presence of contaminants of concern at elevated concentrations has been demonstrated at greater depth in this area. Remedial excavations are therefore, proposed to depths of 2.5m.

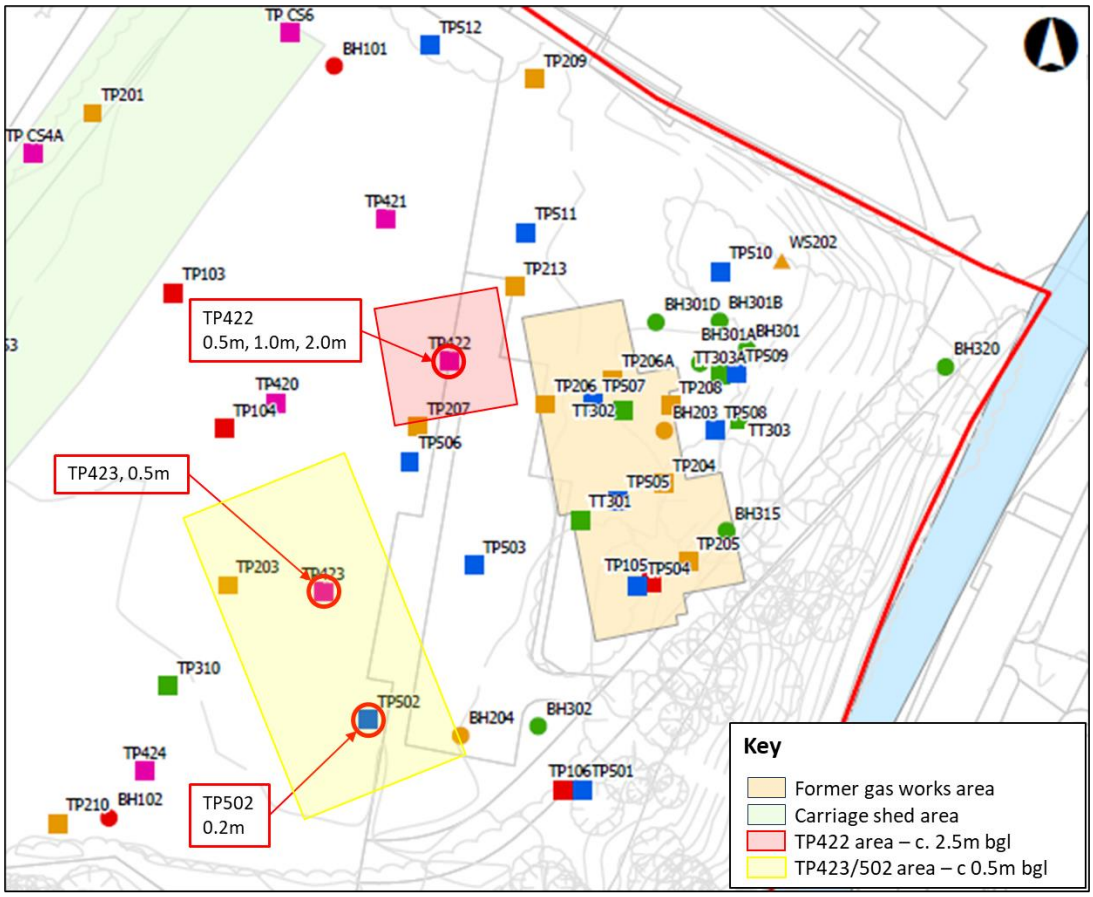


Figure 4. Proposed PFAS remedial areas

On completion of the remedial excavations in this area, verification sampling will be undertaken in accordance with Section 7.6 of the RIP. As agreed subsequently with the EA however, verification sampling in this area will be undertaken on the basis of a 15m sampling grid.

The discovery strategy presented in Section 4.13 of the RIP will be implemented throughout the remediation of the TP422/TP423/TP502 area.

8.3 TP405A remediation area

Although the agreed RIP identified a requirement for remediation of the TP405A area (**Figure 1**), on the basis of the additional data obtained during the November 23 GI (**Table 4**), any PFAS source-term in this area of the site is considered to be too small to present a demonstrable risk to controlled waters. On this basis, it is now concluded that there is no requirement for remediation in the vicinity of TP405A.

8.4 Shallow Groundwater – TP506

If shallow groundwater is encountered in the area of TP506 (**Figure 2**) during remediation or subsequent phases of construction, it should be pumped from the excavation and undergo sampling and analysis for PFAS to confirm options for disposal.

9. Reinstatement of the remediation areas

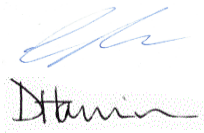
Once the limits of the remedial excavations have been reached and successfully verified, the excavations will be reinstated with suitable engineering fill material placed and compacted in accordance with the specification for the works.[7]

On completion of backfilling to all remediation areas, the upper fill will receive two passes of a smooth roller. The upper surface of the sealed fill will also be laid to a shallow gradient as a further step to inhibit infiltration. These additional measures will be extended for a distance of 10m in all directions, beyond the limits of each reinstated remedial excavation.

References

1. Arup (2023) Victoria North HIF Infrastructure Works – Phase 1 Remediation Implementation and Verification Plan VNIF-ARP-ZZ-YYY-RP-CG-0017, October 2023.
2. LK Group Ltd. (2023), Victoria North Infrastructure Work, Phase 1 Delivery (Pre-Development) Remediation Strategy, Ref LKC 22 1587, August 2023.
3. BAM Ritchies (2023) Victoria North 500 Series Trial Pitting Ground Investigation Report – Factual Account RGN.330V, December 2023.
4. Arup (2023) Controlled Waters Detailed Quantitative Risk Assessment VNIF-ARP-ZZ-YYY-RP-CG-1000, August 2023.
5. Arup (2023) PFAS Human Health Risk Assessment VNIF-ARP-ZZ-YYY-RP-CG-0014, June 2023.
6. Arup (2022) Ground Investigation Report VNIF-ARP-XX-XXX-RP-CG-0012, November 2023.
7. Arup (2023) Victoria North HIF Infrastructure & Enabling Works, Specification for Highway Works – Civil Infrastructure, VNIF-ARP-ZZ-YYY-SP-C-001, November 2022.

DOCUMENT CHECKING

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Appendix A

Victoria North - November 2023 remediation delineation investigation

Appendix A - Summary of soil analysis data (solid phase - November 23 GI)

Trial Pit	Units	TP501	TP501	TP501	TP502	TP502	TP502	TP503	TP503	TP503	TP504	TP504	TP505
Sample depth (mbgl)		0.50-	1.50-	2.50-	0.20-	0.90-	1.70-	0.50-	1.30-	2.30-	0.50-	1.20-	0.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX													
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	7.66	<1	<1	<1	<1	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	1.5	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	<1	<1	9.16	<1	<1	<1	<1	<1	<1	<1	<1
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Victoria North - November 2023 remediation delineation investigation

Appendix A - Summary of soil analysis data (solid phase - November 23 GI)

Trial Pit	Units	TP505	TP506	TP506	TP506	TP507	TP507	TP507	TP508	TP508	TP509	TP509	TP509
Sample depth (mbgl)		1.50-	0.60-	1.40-	2.50-	1.40-	2.50-	3.40-	0.50-	2.40-	0.50-	1.20-	2.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX													
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

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Appendix A - Summary of soil analysis data (solid phase - November 23 GI)

Trial Pit	Units	TP510	TP510	TP510	TP511	TP511	TP511	TP512	TP512	TP512	TP405B	TP405B	TP405B
Sample depth (mbgl)		0.30-	1.40-	2.50-	0.50-	1.50-	2.50-	0.50-	1.50-	2.50-	0.50-	1.50-	2.00-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX													
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	1.34	<1	<1	1.35	<1	<1	<1	<1	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	1.34	<1	<1	1.35	<1	<1	<1	<1	<1	<1	<1	<1
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

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Appendix A - Summary of soil analysis data (solid phase - November 23 GI)

Trial Pit	Units	TP405B	TP405C	TP405C	TP405C	TP405D	TP405D	TP405D
Sample depth (mbgl)		2.50-	0.50-	1.50-	2.50-	0.50-	1.50-	2.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX								
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1

ARUP

Appendix B

Victoria North - November 2023 remediation delineation investigation

Appendix B - Summary of leachability and perched groundwater analysis data (November 23 GI)

Trial Pit	Units	TP405B	TP405B	TP405C	TP405D
Sample depth (mbgl)		2.00-	2.50-	2.50-	2.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38
PRE-OX					
PFBA (375-22-4) Perfluoro-n-butanoic acid	mg/l	<0.000002	0.00000237	<0.0000025	<0.00001
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	mg/l	<0.000001	0.00000137	<0.000001	<0.000005
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	mg/l	<0.000001	0.00000154	<0.000001	<0.000005
PFBS (375-73-5) Perfluoro-1-butanesulfonate	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
6:2-FTS (27619-97-2)	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFOA (335-67-1) Perfluoro-n-octanoic acid	mg/l	<0.00000065	0.00000137	0.00000151	<0.00000325
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFNA (375-95-1) Perfluoro-n-nonanoic acid	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFDA (335-76-2) Perfluoro-n-decanoic acid	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	mg/l	<0.00000065	<0.00000065	<0.00000065	<0.00000325
Branched PFOS	mg/l	<0.00000065	<0.00000065	<0.00000065	<0.00000325
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFOSA (754-91-6) Perfluoro-octanesulfonamide	mg/l	<0.000002	<0.000002	<0.000002	<0.00001
PFDS (335-73-3) Perfluoro-1-decanesulfonate	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	mg/l	<0.000001	<0.000001	<0.000001	<0.000005
Total PFOS	ng/l	<LOD	<LOD	<LOD	<LOD
PFOA	ng/l	<LOD	1.37	1.51	<LOD

Laboratory results > Limit of detection are given in red text

Victoria North - November 2023 remediation delineation investigation

Appendix B - Summary of leachability and perched groundwater analysis data (No

		Perched water sample
Trial Pit	Units	TP506
Sample depth (mbgl)		3.20-
Laboratory ref		231121-38
PRE-OX		
PFBA (375-22-4) Perfluoro-n-butanoic acid	mg/l	0.000029
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	mg/l	0.000019
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	mg/l	0.000022
PFBS (375-73-5) Perfluoro-1-butanesulfonate	mg/l	0.000015
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	mg/l	0.000028
6:2-FTS (27619-97-2)	mg/l	<0.000005
PFOA (335-67-1) Perfluoro-n-octanoic acid	mg/l	0.000054
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	mg/l	<0.000005
PFNA (375-95-1) Perfluoro-n-nonanoic acid	mg/l	<0.000005
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	mg/l	<0.000005
PFDA (335-76-2) Perfluoro-n-decanoic acid	mg/l	<0.000005
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	mg/l	0.000006
Branched PFOS	mg/l	0.000006
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	mg/l	<0.000005
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	mg/l	<0.000005
PFOSA (754-91-6) Perfluoro-octanesulfonamide	mg/l	<0.00001
PFDS (335-73-3) Perfluoro-1-decanesulfonate	mg/l	<0.000005
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	mg/l	<0.000005
Total PFOS	ng/l	12
PFOA	ng/l	54

Laboratory results > Limit of detection are given in red text

ARUP

Appendix C

Appendix C1

Concentration exceeds GAC	100.00
Concentration exceeds verification target (contaminants of concern only)	1400.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation	Verification target in RIP (µg/kg)	TP506 SP	TP507	TP510	TP511
Hole Ref											TP506 SP	TP507	TP510	TP511
Sample Ref											28973221	28973226	28973240	28973243
Easting														
Northing														
Hole Elevation (mOD)														
Sample Depth (mbgl)											-	-1.4	-2.5	-2.5
Sample Date											21/11/23	21/11/23	21/11/23	21/11/23
Investigation														
Geology														
Description														
Moisture Content Ratio (% of as received sample)			%	No GAC	-	12	21		0		21	12	19	19
Colour			No units	No GAC	-				0		Dark Brown	Dark Brown	Dark Brown	Dark Brown
Description			No units	No GAC	-				0		Sandy Clay	Loamy Sand	Sandy Clay Loam	Sandy Clay Loam
Inclusion 1)			No units	No GAC	-				0		Stones	Stones	Stones	Stones
Inclusion 2)			No units	No GAC	-				0		Brick	Vegetation	Oil/Petroleum	Oil/Petroleum
Asbestos														
Date of Analysis			No units	No GAC	-	45258	45259		0		45258			
Analysed By			No units	No GAC	-				0		Agnieszka Chelmowska			
Chrysotile (White) Asbestos			No units	No GAC	-				0		Not Detected			
Amosite (Brown) Asbestos			No units	No GAC	-				0		Not Detected			
Crocidolite (Blue) Asbestos			No units	No GAC	-				0		Not Detected			
Asbestos Anthophyllite			No units	No GAC	-				0		Not Detected			
Asbestos Tremolite			No units	No GAC	-				0		Not Detected			
Asbestos Actinolite			No units	No GAC	-				0		Not Detected			
Non-Asbestos Fibre			No units	No GAC	-				0		Not Detected			
Comments			No units	No GAC	-				0		-			
PAH														
Naphthalene-d8 % recovery**			%	No GAC	-	82.3	106		0		88.5	82.3	90.5	106
Acenaphthene-d10 % recovery**			%	No GAC	-	89.4	112		0		89.4	89.7	102	112
Phenanthrene-d10 % recovery**			%	No GAC	-	87.1	108		0		88.8	91.5	87.1	108
Chrysene-d12 % recovery**			%	No GAC	-	73.6	114		0		73.6	82.4	80	114
Perylene-d12 % recovery**			%	No GAC	-	70.9	118		0		70.9	80.4	79.1	118
Naphthalene	13200		µg/kg	4 of 4	1	12.3	115000		0		12.3	456	115000	1270
Acenaphthylene	5970000		µg/kg	3 of 4	0	<12	5240		0		<12	820	1930	5240
Acenaphthene	6040000		µg/kg	4 of 4	0	19.2	15500		0		19.2	187	15500	4800
Fluorene	4460000		µg/kg	3 of 4	0	<10	9590		0		<10	303	9590	9330
Phenanthrene	1520000		µg/kg	4 of 4	0	38.9	39000		0		38.9	2990	38600	39000
Anthracene	36600000		µg/kg	3 of 4	0	<16	9880		0	1800	<16	914	9880	9000
Fluoranthene	1580000		µg/kg	4 of 4	0	30.6	11100		0	7000	30.6	5670	9870	11100
Pyrene	3790000		µg/kg	4 of 4	0	37	24100		0		37	11700	24100	19800
Benz(a)anthracene	15000		µg/kg	4 of 4	0	19.4	5310		0		19.4	4260	5310	5280
Chrysene	31900		µg/kg	4 of 4	0	18.1	4930		0		18.1	4720	4930	3860
Benzo(b)fluoranthene	4060		µg/kg	4 of 4	1	22.1	5170		0		22.1	5170	3590	3510
Benzo(k)fluoranthene	107000		µg/kg	3 of 4	0	<14	1530		0		<14	1530	878	1110
Benzo(a)pyrene	3230		µg/kg	3 of 4	3	<15	6200		0	3600	<15	6190	6200	5280
Indeno(1,2,3-cd)pyrene	46000		µg/kg	3 of 4	0	<18	4220		0		<18	4220	2290	1800
Dibenzo(a,h)anthracene	320		µg/kg	3 of 4	3	<23	752		0		<23	752	438	327
Benzo(g,h,i)perylene	359000		µg/kg	3 of 4	0	<24	6560		0		<24	6560	3750	3140
PAH, Total Detected USEPA 16			µg/kg	No GAC	-	198	252000		0		198	56400	252000	124000
Phenol and mineral oils														
Phenol	1200		mg/kg	0 of 4	0	<0.01	<0.1		0		<0.01	<0.01	<0.1	<0.1
Cresols			mg/kg	No GAC	-	<0.01	<0.1		0		<0.01	0.0339	<0.1	<0.1
Xylenols			mg/kg	No GAC	-	<0.015	0.197		0		<0.015	<0.015	0.197	<0.15
Phenols, Total Detected monohydric	1200		mg/kg	0 of 4	0	<0.035	<0.35		0		<0.035	<0.035	<0.35	<0.35
Inorganics														
Boron, water soluble	10775		mg/kg	1 of 4	0	<1	1.2		0		<1	<1	1.2	<1
pH			pH Units	No GAC	-	8.27	8.5		0		8.27	8.49	8.42	8.5
Cyanide, Total	24		mg/kg	0 of 4	0	<1	<1		0		<1	<1	<1	<1
Organic Carbon, Total			%	No GAC	-	1.55	7.18		0		1.55	7.18	3.34	1.95
BTEX														
Benzene	1400		µg/kg	1 of 4	0	<10	37.9		0		<10	<20	37.9	<20
Toluene	3927000		µg/kg	1 of 4	0	<10	47		0		<10	<20	47	<20
Ethylbenzene	440000		µg/kg	2 of 4	0	<10	6330		0		<10	<20	6330	210
p/m-Xylene	428000		µg/kg	2 of 4	0	<20	755		0		<20	<40	755	60
o-Xylene	476000		µg/kg	2 of 4	0	<20	3480		0		<20	<40	3480	73.5
Sum of Detected Xylenes			mg/kg	No GAC	-	<0.2	4.24		0		<0.2	<0.4	4.24	<0.4
Sum of BTEX			µg/kg	No GAC	-	<70	10700		0		<70	<140	10700	344
Methyl Tertiary Butyl Ether			µg/kg	No GAC	-	<5	<10		0		<5	<10	<10	<10
Toluene-d8**			%	No GAC	-	99.6	101		0		101	101	99.6	101
TPH														
GRO Surrogate % recovery**			%	No GAC	-	71.5	96.3		0		86.2	71.5	96.3	84.4
Aliphatics >C5-C6	161000		µg/kg	1 of 4	0	<10	<100		0		<10	<10	<100	12.4
Aliphatics >C6-C8	529000		µg/kg	3 of 4	0	<10	493		0		<10	40.7	493	492
Aliphatics >C8-C10	155000		µg/kg	3 of 4	0	<10	4860000		0	4860000	<10	47.5	9420	5350
Aromatics >EC5-EC7			µg/kg	No GAC	-	<10	<100		0		<10	<10	<100	<10
Aromatics >EC7-EC8	3928000		µg/kg	2 of 4	0	<10	<100		0		<10	11.3	<100	11.2
Aromatics >EC8-EC10	269000		µg/kg	3 of 4	0	<10	1342000		0	1342000	<10	31.6	6280	3570
Total Aliphatics >C5-C10			µg/kg	No GAC	-	<50	9910		0		<50	88.1	9910	5860
Total Aromatics >EC5-EC10			µg/kg	No GAC	-	<50	6280		0		<50	<50	6280	3580
GRO >C5-C10			µg/kg	No GAC	-	<20	16200		0		<20	88.1	16200	9440
Aliphatics >C10-C12	767000		µg/kg	3 of 4	0	<1000	37900000		0	37900000	<1000	4850	94100	1240
Aliphatics >C12-C16	4370000		µg/kg	3 of 4	0	<1000	758000000		0	758000000	<1000	79600	300000	7900
Aliphatics >C16-C21	48900000		µg/kg	3 of 4	0	<1000	221000		0		<1000	9860	221000	9660
Aliphatics >C21-C35	48900000		µg/kg	4 of 4	0	3290	60000		0		14400	33800	60000	3290
Aliphatics >C35-C44	48901000		µg/kg	1 of 4	0	<1000	1850		0		<1000	1850	<1000	<1000
Total Aliphatics >C10-C44			µg/kg	No GAC	-	14900	675000		0		14900	219000	675000	22100
Aromatics > EC10-EC12	1240000		µg/kg	3 of 4	0	<1000	772000		0	772000	<1000	1860	268000	16400
Aromatics > EC12-EC16	2480000		µg/kg	3 of 4	0	<1000	3858000		0	3858000	<1000	46300	559000	134000
Aromatics > EC16-EC21	1817000		µg/kg	3 of 4	0	<1000	1120000		0	1120000	<1000	294000	291000	139000
Aromatics > EC21-EC35	1930000		µg/kg	3 of 4	0	<1000	8101000		0	8101000	<1000	581000	213000	99400
Aromatics > EC40-EC44			µg/kg	No GAC	-	<1000	33900		0		<1000	33900	8330	2950
Aromatics >EC35-EC44	1930000		µg/kg	3 of 4	0	<1000	121000		0		<1000	121000	35100	13100
Total Aromatics > EC10-EC44			µg/kg	No GAC	-	<5000	1370000		0		<5000	1050000	1370000	402000
Total Aliphatics & Aromatics >C10-C44			µg/kg	No GAC	-	17000	2040000		0		17000	1260000	2040000	424000
Total Aliphatics & Aromatics >C5-C44			µg/kg	No GAC	-	14900	2060000		0	1000000	14900	1260000	2060000	433000
Heavy metals														
Antimony	618		mg/kg	1 of 4	0	<0.6	8.25		0		<0.6	8.25	<0.6	<0.6
Arsenic	40		mg/kg	4 of 4	0	9.21	17.5		0		9.21	17.5	14.4	9.55
Beryllium	1.7		mg/kg	4 of 4	0	0.744	1.06		0		1.01	1.06	0.787	0.744

Concentration exceeds GAC	100.00
Concentration exceeds verification target (contaminants of concern only)	1400.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation	Verification target in RIP (µg/kg)	Hole Ref	TP506 SP	TP507	TP510	TP511
											Sample Ref	28973221	28973226	28973240	28973243
											Easting				
											Northing				
											Hole Elevation (mOD)				
											Sample Depth (mbgl)	-	-1.4	-2.5	-2.5
											Sample Date	21/11/23	21/11/23	21/11/23	21/11/23
											Investigation				
											Geology				
Cadmium	85		mg/kg	1 of 4	0	<0.02	0.163		0			<0.02	0.163	<0.02	<0.02
Chromium	907		mg/kg	4 of 4	0	6.97	17		0			17	6.97	9.88	13.8
Copper	7130		mg/kg	4 of 4	0	26.7	89		0			29.7	89	26.7	31.4
Lead	310		mg/kg	4 of 4	1	91.6	615		0			149	266	615	91.6
Mercury	56		mg/kg	3 of 4	0	<0.1	0.258		0			0.205	0.125	0.258	<0.1
Nickel	181		mg/kg	4 of 4	0	18	32.3		0			32.3	23	18	25.6
Selenium	430		mg/kg	1 of 4	0	<1	1.18		0			<1	1.18	<1	<1
Vanadium	1200		mg/kg	4 of 4	0	18.6	27.6		0			27.6	26.8	18.6	19.8
Zinc	40400		mg/kg	4 of 4	0	42.1	153		0			64.1	153	42.1	54
VOCs															
Dibromofluoromethane**			%	No GAC	-	108	118		0			109	118	108	116
4-Bromofluorobenzene**			%	No GAC	-	90.7	95		0			95	93.9	91.1	90.7
Dichlorodifluoromethane			µg/kg	No GAC	-	<10	<10		0					<10	<10
Chloromethane	18.8		µg/kg	0 of 2	0	<40	<40		0					<40	<40
Vinyl Chloride	1.53		µg/kg	0 of 2	0	<10	<10		0					<10	<10
Bromomethane			µg/kg	No GAC	-	<20	<20		0					<20	<20
Chloroethane	26000		µg/kg	0 of 2	0	<20	<20		0					<20	<20
Trichlorofluoromethane			µg/kg	No GAC	-	<10	<10		0					<10	<10
1,1-Dichloroethene	1170		µg/kg	0 of 2	0	<10	<10		0					<10	<10
Carbon Disulphide	622		µg/kg	0 of 2	0	<20	<20		0					<20	<20
Dichloromethane	6370		µg/kg	0 of 2	0	<100	<100		0					<100	<100
trans-1,2-Dichloroethene			µg/kg	No GAC	-	<20	<20		0					<20	<20
1,1-Dichloroethane	10900		µg/kg	0 of 2	0	<10	<10		0					<10	<10
cis-1,2-Dichloroethene			µg/kg	No GAC	-	<10	<10		0					<10	<10
2,2-Dichloropropane			µg/kg	No GAC	-	<20	<20		0					<20	<20
Bromochloromethane			µg/kg	No GAC	-	<40	<40		0					<40	<40
Chloroform	4220		µg/kg	0 of 2	0	<60	<60		0					<60	<60
1,1,1-Trichloroethane	40400		µg/kg	0 of 2	0	<10	<10		0					<10	<10
1,1-Dichloropropene			µg/kg	No GAC	-	<10	<10		0					<10	<10
Carbontetrachloride			µg/kg	No GAC	-	<10	<10		0					<10	<10
1,2-Dichloroethane	22.7		µg/kg	0 of 2	0	<20	<20		0					<20	<20
Trichloroethene	79.7		µg/kg	0 of 2	0	<20	<20		0					<20	<20
1,2-Dichloropropane	121		µg/kg	0 of 2	0	<10	<10		0					<10	<10
Dibromomethane			µg/kg	No GAC	-	<20	<20		0					<20	<20
Bromodichloromethane	96		µg/kg	0 of 2	0	<40	<40		0					<40	<40
cis-1,3-Dichloropropene			µg/kg	No GAC	-	<10	<10		0					<10	<10
trans-1,3-Dichloropropene			µg/kg	No GAC	-	<20	<20		0					<20	<20
1,1,2-Trichloroethane	5530		µg/kg	0 of 2	0	<20	<20		0					<20	<20
1,3-Dichloropropane			µg/kg	No GAC	-	<20	<20		0					<20	<20
Tetrachloroethene	920		µg/kg	0 of 2	0	<40	<40		0					<40	<40
Dibromochloromethane			µg/kg	No GAC	-	<40	<40		0					<40	<40
1,2-Dibromoethane			µg/kg	No GAC	-	<20	<20		0					<20	<20
Chlorobenzene	2410		µg/kg	0 of 2	0	<40	<40		0					<40	<40
1,1,1,2-Tetrachloroethane	8200		µg/kg	0 of 2	0	<20	<20		0					<20	<20
Styrene	236000		µg/kg	1 of 2	0	<40	130		0					130	<40
Bromoform	32400		µg/kg	0 of 2	0	<100	<100		0					<100	<100
Isopropylbenzene	95400		µg/kg	2 of 2	0	114	955		0					955	114
1,1,2,2-Tetrachloroethane	17200		µg/kg	0 of 2	0	<40	<40		0					<40	<40
1,2,3-Trichloropropane			µg/kg	No GAC	-	<40	<40		0					<40	<40
Bromobenzene	7000		µg/kg	0 of 2	0	<40	<40		0					<40	<40
Propylbenzene			µg/kg	No GAC	-	610	871		0					871	610
2-Chlorotoluene			µg/kg	No GAC	-	<60	<60		0					<60	<60
1,3,5-Trimethylbenzene			µg/kg	No GAC	-	180	1370		0					1370	180
4-Chlorotoluene			µg/kg	No GAC	-	<60	<60		0					<60	<60
tert-Butylbenzene			µg/kg	No GAC	-	<40	<40		0					<40	<40
1,2,4-Trimethylbenzene	3310		µg/kg	2 of 2	1	1140	15700		0					15700	1140
sec-Butylbenzene			µg/kg	No GAC	-	91.9	227		0					227	91.9
4-Isopropyltoluene			µg/kg	No GAC	-	63.8	1150		0					1150	63.8
1,3-Dichlorobenzene	2450		µg/kg	0 of 2	0	<100	<100		0					<100	<100
1,4-Dichlorobenzene	350000		µg/kg	0 of 2	0	<100	<100		0					<100	<100
n-Butylbenzene			µg/kg	No GAC	-	356	373		0					373	356
1,2-Dichlorobenzene	133000		µg/kg	0 of 2	0	<100	<100		0					<100	<100
1,2-Dibromo-3-chloropropane			µg/kg	No GAC	-	<40	<40		0					<40	<40
Tert-amyl methyl ether			µg/kg	No GAC	-	<20	<20		0					<20	<20
1,2,4-Trichlorobenzene	15300		µg/kg	0 of 2	0	<140	<140		0					<140	<140
Hexachlorobutadiene	1790		µg/kg	0 of 2	0	<80	<80		0					<80	<80
1,2,3-Trichlorobenzene	8810		µg/kg	0 of 2	0	<200	<200		0					<200	<200
1,3,5-Trichlorobenzene			µg/kg	No GAC	-	<140	<140		0					<140	<140
Pentachlorophenol	30600		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
n-Nitroso-n-dipropylamine			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Nitrobenzene			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Isophorone			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Hexachloroethane	1800		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
Hexachlorocyclopentadiene			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Hexachlorobenzene	6380		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
n-Dioctyl phthalate			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Dimethyl phthalate			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Diethyl phthalate	8970000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
n-Dibutyl phthalate			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Dibenzofuran			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Carbazole			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Butylbenzyl phthalate			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
bis(2-Ethylhexyl) phthalate	4090000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
bis(2-Chloroethoxy)methane			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
bis(2-Chloroethyl)ether			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
Azobenzene			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Nitrophenol			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Nitroaniline			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Methylphenol	10000000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
4-Chlorophenylphenylether			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Chloroaniline			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Chloro-3-methylphenol			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
4-Bromophenylphenylether			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000

Concentration exceeds GAC	100.00
Concentration exceeds verification target (contaminants of concern only)	1400.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation	Verification target in RIP (µg/kg)	Hole Ref	TP506 SP	TP507	TP510	TP511
											Sample Ref	28973221	28973226	28973240	28973243
											Easting				
											Northing				
											Hole Elevation (mOD)				
											Sample Depth (mbgl)	-	-1.4	-2.5	-2.5
											Sample Date	21/11/23	21/11/23	21/11/23	21/11/23
											Investigation				
											Geology				
3-Nitroaniline			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
2-Nitrophenol			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
2-Nitroaniline			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000
2-Methylphenol	9930000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2-Chlorophenol	207000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,6-Dinitrotoluene	125000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,4-Dinitrotoluene	254000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,4-Dimethylphenol	1040000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,4-Dichlorophenol	186000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,4,6-Trichlorophenol	231000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2,4,5-Trichlorophenol	210000		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2-Chloronaphthalene	31600		µg/kg	0 of 2	0	<2000	<2000		0					<2000	<2000
2-Methylnaphthalene			µg/kg	No GAC	-	<2000	50700		0					50700	<2000
Benzo(a)anthracene	15000		µg/kg	2 of 2	0	3490	5560		0					5560	3490
Bis(2-chloroisopropyl) ether			µg/kg	No GAC	-	<2000	<2000		0					<2000	<2000

Appendix C2

Concentration exceeded previous DQRA maximum | 100.00

ARUP

Contaminant Name	Previous DQRA maximum	ResiNoPlant GAC	Units	Total > LOD	Total > GAC	Min	Max					
Hole Ref									TP506 SP	TP507	TP510	TP511
Sample Ref									28973221	28973226	28973240	28973243
Hole Elevation (mOD)												
Sample Depth (mbgl)									-	-1.4	-2.5	-2.5
Sample Date									21/11/23	21/11/23	21/11/23	21/11/23
Investigation												
Geology												
Description												
Moisture Content Ratio (% of as received sample)			%	No GAC	-	12	21		21	12	19	19
Colour			No units	No GAC	-				Dark Brown	Dark Brown	Dark Brown	Dark Brown
Description			No units	No GAC	-				Sandy Clay	Loamy Sand	Sandy Clay Loam	Sandy Clay Loam
Inclusion 1)			No units	No GAC	-				Stones	Stones	Stones	Stones
Inclusion 2)			No units	No GAC	-				Brick	Vegetation	Oil/Petroleum	Oil/Petroleum
Asbestos												
Date of Analysis			No units	No GAC	-	45258	45259		45258			
Analysed By			No units	No GAC	-				Agnieszka Chelmowska			
Chrysotile (White) Asbestos			No units	No GAC	-				Not Detected			
Amosite (Brown) Asbestos			No units	No GAC	-				Not Detected			
Crocidolite (Blue) Asbestos			No units	No GAC	-				Not Detected			
Asbestos Anthophyllite			No units	No GAC	-				Not Detected			
Asbestos Tremolite			No units	No GAC	-				Not Detected			
Asbestos Actinolite			No units	No GAC	-				Not Detected			
Non-Asbestos Fibre			No units	No GAC	-				Not Detected			
Comments			No units	No GAC	-				-			
PAH												
Naphthalene-d8 % recovery**			%	No GAC	-	82.3	106		88.5	82.3	90.5	106
Acenaphthene-d10 % recovery**			%	No GAC	-	89.4	112		89.4	89.7	102	112
Phenanthrene-d10 % recovery**			%	No GAC	-	87.1	108		88.8	91.5	87.1	108
Chrysene-d12 % recovery**			%	No GAC	-	73.6	114		73.6	82.4	80	114
Perylene-d12 % recovery**			%	No GAC	-	70.9	118		70.9	80.4	79.1	118
Naphthalene	822000	13200	µg/kg	4 of 4	0	12.3	115000		12.3	456	115000	1270
Acenaphthylene	110000	5970000	µg/kg	3 of 4	0	<16	5240		<16	820	1930	5240
Acenaphthene	94100	6040000	µg/kg	4 of 4	0	19.2	15500		19.2	187	15500	4800
Fluorene	248000	4460000	µg/kg	3 of 4	0	<10	9590		<10	303	9590	9330
Phenanthrene	1080000	1520000	µg/kg	4 of 4	0	38.9	39000		38.9	2990	38600	39000
Anthracene	155000	36600000	µg/kg	3 of 4	0	<16	9880		<16	914	9880	9000
Fluoranthene	272000	1580000	µg/kg	4 of 4	0	30.6	11100		30.6	5670	9870	11100
Pyrene	437000	3790000	µg/kg	4 of 4	0	37	24100		37	11700	24100	19800
Benz(a)anthracene	205000	15000	µg/kg	4 of 4	0	19.4	5310		19.4	4260	5310	5280
Chrysene	409000	31900	µg/kg	4 of 4	0	18.1	4930		18.1	4720	4930	3860
Benzo(a)anthracene	205000	15000	µg/kg	2 of 2	0	3490	5560				5560	3490
Benzo(b)fluoranthene	111000	4060	µg/kg	4 of 4	0	22.1	5170		22.1	5170	3590	3510
Benzo(k)fluoranthene	48800	107000	µg/kg	3 of 4	0	<14	1530		<14	1530	878	1110
Benzo(a)pyrene	123000	3230	µg/kg	3 of 4	0	<15	6200		<15	6190	6200	5280
Indeno(1,2,3-cd)pyrene	65400	46000	µg/kg	3 of 4	0	<18	4220		<18	4220	2290	1800
Dibenzo(a,h)anthracene	19200	320	µg/kg	3 of 4	0	<23	752		<23	752	438	327
Benzo(g,h,i)perylene	74600	359000	µg/kg	3 of 4	0	<24	6560		<24	6560	3750	3140
PAH, Total Detected USEPA 16	4270000		µg/kg	4 of 4	0	198	252000		198	56400	252000	124000
Phenol and mineral oils												
Phenol	0.5	1200	mg/kg	0 of 4	0	<0.01	<0.1		<0.01	<0.01	<0.1	<0.1
Cresols	0.5		mg/kg	1 of 4	0	<0.01	<0.1		<0.01	0.0339	<0.1	<0.1
Xylenols	0.2		mg/kg	1 of 4	0	<0.015	0.197		<0.015	<0.015	0.197	<0.15
Phenols, Total Detected monohydric	12	1200	mg/kg	0 of 4	0	<0.035	<0.35		<0.035	<0.035	<0.35	<0.35
Inorganics												
Boron, water soluble	3.5	10775	mg/kg	1 of 4	0	<1	1.2		<1	<1	1.2	<1
pH			pH Units	No GAC	-	8.27	8.5		8.27	8.49	8.42	8.5
Cyanide, Total	200	24	mg/kg	0 of 4	0	<1	<1		<1	<1	<1	<1
Organic Carbon, Total			%	No GAC	-	1.55	7.18		1.55	7.18	3.34	1.95
BTEX												
Benzene	410	1400	µg/kg	1 of 4	0	<10	37.9		<10	<20	37.9	<20
Toluene	380	3927000	µg/kg	1 of 4	0	<10	47		<10	<20	47	<20
Ethylbenzene	340	440000	µg/kg	2 of 4	1	<10	6330		<10	<20	6330	210
p/m-Xylene	820	428000	µg/kg	2 of 4	0	<20	755		<20	<40	755	60
o-Xylene	2130	476000	µg/kg	2 of 4	1	<20	3480		<20	<40	3480	73.5
Sum of Detected Xylenes	1.9		mg/kg	1 of 4	1	<0.2	4.24		<0.2	<0.4	4.24	<0.4
Sum of BTEX	5900		µg/kg	2 of 4	1	<70	10700		<70	<140	10700	344
Methyl Tertiary Butyl Ether	200		µg/kg	0 of 4	0	<5	<10		<5	<10	<10	<10
Toluene-d8**			%	No GAC	-	99.6	101		101	101	99.6	101
TPH												
GRO Surrogate % recovery**			%	No GAC	-	71.5	96.3		86.2	71.5	96.3	84.4
GRO >C5-C10			µg/kg	No GAC	-	<20	16200		<20	88.1	16200	9440
Aliphatics >C5-C6	100	161000	µg/kg	1 of 4	0	<10	<100		<10	<10	<100	12.4
Aliphatics >C6-C8	1200	529000	µg/kg	3 of 4	0	<10	493		<10	40.7	493	492
Aliphatics >C8-C10	200000	155000	µg/kg	3 of 4	0	<10	9420		<10	47.5	9420	5350
Aliphatics >C10-C12	200000	767000	µg/kg	3 of 4	0	<1000	94100		<1000	4850	94100	1240
Aliphatics >C12-C16	1080000	4370000	µg/kg	3 of 4	0	<1000	300000		<1000	79600	300000	7900
Aliphatics >C16-C21	945000	48900000	µg/kg	3 of 4	0	<1000	221000		<1000	98600	221000	9660
Aliphatics >C21-C35	4730000	48900000	µg/kg	4 of 4	0	3290	60000		14400	33800	60000	3290
Aliphatics >C35-C44	1210000	48901000	µg/kg	1 of 4	0	<1000	1850		<1000	1850	<1000	<1000
Total Aliphatics >C5-C10			µg/kg	No GAC	-	<50	9910		<50	88.1	9910	5860
Total Aliphatics >C10-C44	5930000		µg/kg	4 of 4	0	14900	675000		14900	219000	675000	22100
Aromatics >EC5-EC7			µg/kg	No GAC	-	<10	<100		<10	<10	<100	<10
Aromatics >EC7-EC8	380	3928000	µg/kg	2 of 4	0	<10	<100		<10	11.3	<100	11.2
Aromatics >EC8-EC10	395000	269000	µg/kg	3 of 4	0	<10	6280		<10	31.6	6280	3570
Aromatics > EC10-EC12	1280000	1240000	µg/kg	3 of 4	0	<1000	268000		<1000	1860	268000	16400
Aromatics > EC12-EC16	5680000	2480000	µg/kg	3 of 4	0	<1000	559000		<1000	46300	559000	134000
Aromatics > EC16-EC21	10900000	1817000	µg/kg	3 of 4	0	<1000	294000		<1000	294000	291000	139000
Aromatics > EC21-EC35	27800000	1930000	µg/kg	3 of 4	0	<1000	581000		<1000	581000	213000	99400
Aromatics > EC40-EC44			µg/kg	No GAC	-	<1000	33900		<1000	33900	8330	2950
Aromatics >EC35-EC44	1110000	1930000	µg/kg	3 of 4	0	<1000	121000		<1000	121000	35100	13100
Total Aromatics >EC5-EC10			µg/kg	No GAC	-	<50	6280		<50	<50	6280	3580
Total Aromatics > EC10-EC44			µg/kg	No GAC	-	<5000	1370000		<5000	1050000	1370000	402000
Total Aliphatics & Aromatics >C10-C44			µg/kg	No GAC	-	17000	2040000		17000	1260000	2040000	424000
Total Aliphatics & Aromatics >C5-C44	53000000		µg/kg	4 of 4	0	14900	2060000		14900	1260000	2060000	433000
Heavy metals												
Antimony	667	618	mg/kg	1 of 4	0	<0.6	8.25		<0.6	8.25	<0.6	<0.6
Arsenic	400	40	mg/kg	4 of 4	0	9.21	17.5		9.21	17.5	14.4	9.55
Beryllium	4	2	mg/kg	4 of 4	0	0.744	1.06		1.01	1.06	0.787	0.744
Cadmium	9.84	85	mg/kg	1 of 4	0	<0.02	0.163		<0.02	0.163	<0.02	<0.02
Chromium	1450	907	mg/kg	4 of 4	0	6.97	17		17	6.97	9.88	13.8
Copper	700	7130	mg/kg	4 of 4	0	26.7	89		29.7	89	26.7	31.4
Lead	12400	310	mg/kg	4 of 4	0	91.6	615		149	266	615	91.6
Mercury	24	56	mg/kg	3 of 4	0	<0.1	0.258		0.205	0.125	0.258	<0.1
Nickel	247	181	mg/kg	4 of 4	0	18	32.3		32.3	23	18	25.6
Selenium	10	430	mg/kg	1 of 4	0	<1	1.18		<1	1.18	<1	<1
Vanadium	1240	1200	mg/kg	4 of 4	0	18.6	27.6		27.6	26.8	18.6	19.8
Zinc	2690	40400	mg/kg	4 of 4	0	42.1	153		64.1	153	42.1	54
VOCs												
Dibromofluoromethane**	115000		%	4 of 4	0	108	118		109	118	108	116
4-Bromofluorobenzene**	97900		%	4 of 4	0	90.7	95		95	93.9	91.1	90.7
Dichlorodifluoromethane	12000		µg/kg	0 of 2	0	<10	<10				<10	<10
Chloromethane	140	18.8	µg/kg	0 of 2	0	<40	<40				<40	<40
Vinyl Chloride	120	1.53	µg/kg	0 of 2	0	<10	<10				<10	<10
Bromomethane	200		µg/kg	0 of 2	0	<20	<20				<20	<20
Chloroethane	200	26000	µg/kg	0 of 2	0	<20	<20				<20	<20
Trichlorofluoromethane	120		µg/kg	0 of 2	0	<10	<10				<10	<10

Concentration exceeded previous DQRA maximum | 100.00

ARUP

Contaminant Name	Previous DQRA maximum	ResiNoPlant GAC	Units	Total > LOD	Total > GAC	Min	Max	Hole Ref	TP506 SP	TP507	TP510	TP511
								Sample Ref	28973221	28973226	28973240	28973243
								Hole Elevation (mOD)				
								Sample Depth (mbgl)	-	-1.4	-2.5	-2.5
								Sample Date	21/11/23	21/11/23	21/11/23	21/11/23
								Investigation				
								Geology				
1,1-Dichloroethene	200	1170	µg/kg	0 of 2	0	<10	<10				<10	<10
Carbon Disulphide	140	622	µg/kg	0 of 2	0	<20	<20				<20	<20
Dichloromethane	200	6370	µg/kg	0 of 2	0	<100	<100				<100	<100
trans-1,2-Dichloroethene	200		µg/kg	0 of 2	0	<20	<20				<20	<20
1,1-Dichloroethane	160	10900	µg/kg	0 of 2	0	<10	<10				<10	<10
cis-1,2-Dichloroethene	120		µg/kg	0 of 2	0	<10	<10				<10	<10
2,2-Dichloropropane	200		µg/kg	0 of 2	0	<20	<20				<20	<20
Bromochloromethane	200		µg/kg	0 of 2	0	<40	<40				<40	<40
Chloroform	160	4220	µg/kg	0 of 2	0	<60	<60				<60	<60
1,1,1-Trichloroethane	140	40400	µg/kg	0 of 2	0	<10	<10				<10	<10
1,1-Dichloropropene	200		µg/kg	0 of 2	0	<10	<10				<10	<10
Carbontetrachloride	200		µg/kg	0 of 2	0	<10	<10				<10	<10
1,2-Dichloroethane	100	22.7	µg/kg	0 of 2	0	<20	<20				<20	<20
Trichloroethene	180	79.7	µg/kg	0 of 2	0	<20	<20				<20	<20
1,2-Dichloropropane	200	121	µg/kg	0 of 2	0	<10	<10				<10	<10
Dibromomethane	180		µg/kg	0 of 2	0	<20	<20				<20	<20
Bromodichloromethane	140	96	µg/kg	0 of 2	0	<40	<40				<40	<40
cis-1,3-Dichloropropene	200		µg/kg	0 of 2	0	<10	<10				<10	<10
trans-1,3-Dichloropropene	200		µg/kg	0 of 2	0	<20	<20				<20	<20
1,1,2-Trichloroethane	200	5530	µg/kg	0 of 2	0	<20	<20				<20	<20
1,3-Dichloropropane	140		µg/kg	0 of 2	0	<20	<20				<20	<20
Tetrachloroethene	100	920	µg/kg	0 of 2	0	<40	<40				<40	<40
Dibromochloromethane	200		µg/kg	0 of 2	0	<40	<40				<40	<40
1,2-Dibromoethane	200		µg/kg	0 of 2	0	<20	<20				<20	<20
Chlorobenzene	100	2410	µg/kg	0 of 2	0	<40	<40				<40	<40
1,1,1,2-Tetrachloroethane	200	8200	µg/kg	0 of 2	0	<20	<20				<20	<20
Styrene	200	236000	µg/kg	1 of 2	0	<40	130				130	<40
Bromoform	200	32400	µg/kg	0 of 2	0	<190	<190				<190	<190
Isopropylbenzene	100	95400	µg/kg	2 of 2	2	114	955				955	114
1,1,2,2-Tetrachloroethane	200	17200	µg/kg	0 of 2	0	<40	<40				<40	<40
1,2,3-Trichloropropane	320		µg/kg	0 of 2	0	<40	<40				<40	<40
Bromobenzene	200	7000	µg/kg	0 of 2	0	<40	<40				<40	<40
Propylbenzene	200		µg/kg	2 of 2	2	610	871				871	610
2-Chlorotoluene	180		µg/kg	0 of 2	0	<60	<60				<60	<60
1,3,5-Trimethylbenzene	420		µg/kg	2 of 2	1	180	1370				1370	180
4-Chlorotoluene	200		µg/kg	0 of 2	0	<60	<60				<60	<60
tert-Butylbenzene	280		µg/kg	0 of 2	0	<40	<40				<40	<40
1,2,4-Trimethylbenzene	850	3310	µg/kg	2 of 2	2	1140	15700				15700	1140
sec-Butylbenzene	850		µg/kg	2 of 2	0	91.9	227				227	91.9
4-Isopropyltoluene	200		µg/kg	2 of 2	1	63.8	1150				1150	63.8
1,3-Dichlorobenzene	160	2450	µg/kg	0 of 2	0	<100	<100				<100	<100
1,4-Dichlorobenzene	100	350000	µg/kg	0 of 2	0	<100	<100				<100	<100
n-Butylbenzene	220		µg/kg	2 of 2	2	356	373				373	356
1,2-Dichlorobenzene	200	133000	µg/kg	0 of 2	0	<100	<100				<100	<100
1,2-Dibromo-3-chloropropane	280		µg/kg	0 of 2	0	<40	<40				<40	<40
Tert-amyl methyl ether	200		µg/kg	0 of 2	0	<20	<20				<20	<20
1,2,4-Trichlorobenzene	400	15300	µg/kg	0 of 2	0	<140	<140				<140	<140
Hexachlorobutadiene	400	1790	µg/kg	0 of 2	0	<80	<80				<80	<80
1,2,3-Trichlorobenzene	400	8810	µg/kg	0 of 2	0	<200	<200				<200	<200
1,3,5-Trichlorobenzene			µg/kg	No GAC	-	<140	<140				<140	<140
Pentachlorophenol	100	30600	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
n-Nitroso-n-dipropylamine	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Nitrobenzene	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Isophorone	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Hexachloroethane	100	1800	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Hexachlorocyclopentadiene	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Hexachlorobenzene	100	6380	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
n-Dioctyl phthalate	500		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Dimethyl phthalate	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Diethyl phthalate	100	8970000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
n-Dibutyl phthalate	345		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Dibenzofuran	16900		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Carbazole	7750		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Butylbenzyl phthalate	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
bis(2-Ethylhexyl) phthalate	785	4090000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
bis(2-Chloroethoxy)methane	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
bis(2-Chloroethyl)ether	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
Azobenzene	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Nitrophenol	6200		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Nitroaniline	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Methylphenol	400	10000000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Chlorophenylphenylether	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Chloroaniline			µg/kg	No GAC	-	<2000	<2000				<2000	<2000
4-Chloro-3-methylphenol	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
4-Bromophenylphenylether	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
3-Nitroaniline	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Nitrophenol	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Nitroaniline	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Methylphenol	200	9930000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Chlorophenol	100	207000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,6-Dinitrotoluene	200	125000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,4-Dinitrotoluene	100	254000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,4-Dimethylphenol	200	1040000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,4-Dichlorophenol	100	186000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,4,6-Trichlorophenol	100	231000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2,4,5-Trichlorophenol	100	210000	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Chloronaphthalene	100	31600	µg/kg	0 of 2	0	<2000	<2000				<2000	<2000
2-Methylnaphthalene	23800		µg/kg	1 of 2	1	<2000	50700				50700	<2000
Bis(2-chloroisopropyl) ether	100		µg/kg	0 of 2	0	<2000	<2000				<2000	<2000

Appendix D

Victoria North - November 2023 remediation delineation investigation

Appendix D - Summary of PFAS (solid phase - March and November 23 GIs)

			March 23 GI											
Trial Pit	Units	Validation criteria	TP418	TP420	TP421	TP422	TP422	TP422	TP423	TP423	TP423	TP424	TP424	TP501
Sample depth (mbgl)			0.50-	0.75-	0.40-0.40	0.50-	1.00-	2.00-	0.50-0.50	1	2.00-	0.50-0.50	1.00-1.00	0.50-
Laboratory ref		µg/kg	230520-22	230401-52	230401-106	230524-55	230524-55	230524-55	230401-106	230524-55	230524-55	230401-106	230401-106	231121-38
PRE-OX														
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	2	<2	<2	<2	7.47	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	2	<1	<1	<1	13.8	2.31	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	1	<1	<1	<1	29.8	4.89	1.24	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	2	<1	<1	<1	8.55	11	1.09	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	2	<1	<1	<1	22.5	5.46	1.07	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	2	<2	<2	<2	<8.39	<2	<2	14.21	<2	<2	<2	<2	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	-	<1	<1	<1	3.04	21	2.77	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	-	<1	<1	1.03	2.74	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Exceedance of RIP Validation Criteria

Marginal Exceedance of RIP Validation Criteria

Victoria North - November 2023 remediation delineation investigation

Appendix D - Summary of PFAS (solid phase - March and November 23 GIs)

Trial Pit	Units	TP501	TP501	TP502	TP502	TP502	TP503	TP503	TP503	TP504	TP504	TP505	TP505	TP506
Sample depth (mbgl)		1.50-	2.50-	0.20-	0.90-	1.70-	0.50-	1.30-	2.30-	0.50-	1.20-	0.50-	1.50-	0.60-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX														
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<!	<1	9.16	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Exceedance of RIP Validation Criteria
Marginal Exceedance of RIP Validation Criteria

Victoria North - November 2023 remediation delineation investigation

Appendix D - Summary of PFAS (solid phase - March and November 23 GIs)

		November 23 GI												
Trial Pit	Units	TP506	TP506	TP507	TP507	TP507	TP508	TP508	TP509	TP509	TP509	TP510	TP510	TP510
Sample depth (mbgl)		1.40-	2.50-	1.40-	2.50-	3.40-	0.50-	2.40-	0.50-	1.20-	2.50-	0.30-	1.40-	2.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX														
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.35	<!	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Exceedance of RIP Validation Criteria

Marginal Exceedance of RIP Validation Criteria

Victoria North - November 2023 remediation delineation investigation

Appendix D - Summary of PFAS (solid phase - March and November 23 GIs)

Trial Pit	Units	TP511	TP511	TP511	TP512	TP512	TP512
Sample depth (mbgl)		0.50-	1.50-	2.50-	0.50-	1.50-	2.50-
Laboratory ref		231121-38	231121-38	231121-38	231121-38	231121-38	231121-38
PRE-OX							
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	1.35	<1	<1	<!	<1	<!
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1

Exceedance of RIP Validation Criteria
Marginal Exceedance of RIP Validation Criteria

B.2 Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria

ARUP

Technical Note

Project title	Victoria North
Job number	282022
File reference	4-05-11
cc	
Prepared by	Del Harrison
Date	18 March 2024
Subject	Addendum to Remediation Implementation Plan (RIP): Phase 1 re-use criteria

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1. Background

Arup prepared a Detailed Quantitative Risk Assessment (DQRA) report[1] for the Application 2 area of Victoria North in Manchester. The DQRA considered the risks posed by known areas of contamination and the re-use of materials close to the River Irk.

The remedial targets developed in the DQRA were transferred into the Remediation Strategy[2] and Remediation Implementation Plan (RIP)[3] for Phase 1 of the works. The Phase 1 site boundary is shown in **Figure 1** below and comprises the areas of Victoria North known as Red Bank Plateau and Red Bank Terrace.

The main objective of the remediation strategy for Phase 1 is to remove known areas of contamination that were identified through ground investigation. A discovery strategy will also be in place throughout the works to ensure any previously unidentified areas of contamination are dealt with appropriately.

The entire Phase 1 area comprises several metres of made ground, which was placed in the 19th and 20th centuries to create a raised platform for railway infrastructure. Where no specific remediation is required, the existing made ground will be locally redistributed to create a landform for future development. This local redistribution of materials was described in the DQRA as materials which are excavated and re-used within the same site area, for example: materials which are excavated within Red Bank Plateau and re-used within Red Bank Plateau. This activity was not considered to introduce new contaminant linkages, or increase the risks to controlled waters. The DQRA concluded that locally redistributed made ground was not required to meet specific chemical re-use

[1] Arup (2023) Controlled Waters Detailed Quantitative Risk Assessment for Victoria North HIF Infrastructure Works. VNIF-ARP-ZZ-YYY-RP-CG-1000 P01 21st August 2023

[2] LK Group (2023) Victoria North Infrastructure Work Phase 1 Delivery (Pre-Development) Remediation Strategy. LKC 22 1587 October 2023

[3] Arup (2023) Victoria North HIF Infrastructure Works – Phase 1. Remediation Implementation and Verification Plan. VNIF-ARP-ZZ-YYY-RP-CG-0017 P01, 27th October 2023

criteria, provided that it does not show signs of contamination. This conclusion was transferred into Section 2.4 of the Remediation Strategy.

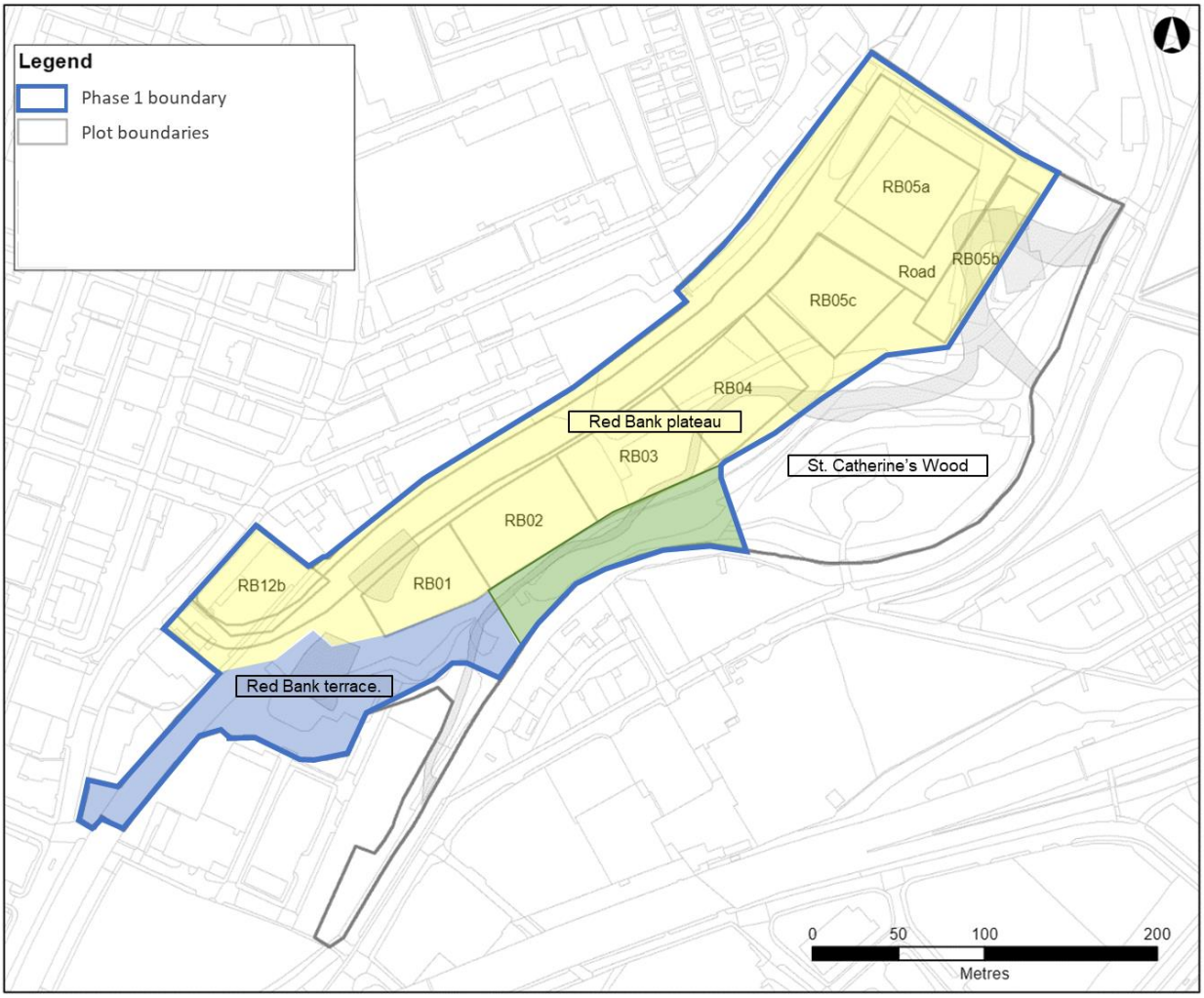


Figure 1 Victoria North Phase 1 boundary

The DQRA acknowledged that, if made ground was to be taken from one area of the site (e.g. Red Bank Plateau), and placed as fill in a different area (e.g. St. Catherine's Wood), that this would not be 'local redistribution' and could potentially introduce new or different contaminant linkages. Therefore, re-use criteria were generated in the DQRA to ensure that the River Irk would be protected if made ground was to be re-used in a different area to where it originated.

For the purposes of risk assessment and the protection of the River Irk, the terms 'Zone 1' and 'Zone 2' were introduced in the DQRA. The zones were defined as follows:

- Zone 1 was the area of land between the River Irk and 50m from the riverbank
- Zone 2 was the area of land between 50m and 130m from the River Irk.

Re-use criteria were derived for Zone 1 and Zone 2 in the DQRA. The Environment Agency (EA) provided formal comments on the DQRA in October 2023[4], which stated that:

"For non-PFAS contaminants, we welcome the use of the RTM P20 derived values as set out in Table 34 [of the DQRA] for 'Zone 1' as identified in Drawing 14 [of the DQRA]. As Table 34 presents the more conservative values (between Table 34 and 35) we advise these are used for the Phase 1 area to provide the best assurance that the protection of 'controlled' waters is achieved".

It appears that the term 'Phase 1' may have been used in the text above rather than 'Zone 1' and has resulted in unintended, overly conservative, consequences. In the Remediation Implementation Plan the significantly more conservative re-use criteria derived for the sensitive **Zone 1** adjacent to the river are applied to the less sensitive **Phase 1** planning area on Red Bank Plateau. As the RIP has been presented, the values in Table 4 of the RIP apply to the re-use of all material within Phase 1, including locally redistributed material.

As was illustrated in Table 34 of the DQRA (reproduced as **Figure 2** below), comparison of the 95th percentile concentrations of several of the contaminants in made ground with the Zone 1 re-use criteria for the area adjacent to the river, showed that soil from Red Bank Plateau is unlikely to be suitable for re-use outside of Phase 1, because of the potential risks to the River Irk. For this reason, Section 7.7.2 of the RIP stated that "There will be no transfer of site-won fill from the Phase 1 area to any other areas of the [Victoria North] site".

Application of the Zone 1 criteria also to the Phase 1 planning area would likely to mean that no made ground could be re-used, as the majority of made ground on Red Bank Plateau exceeds the Zone 1 criteria. This was not the intended outcome and is not consistent with the desired sustainable approach to the proposed earthworks, which is to retain as much suitable material on site as possible. The way forward to rectify this is presented below.

[4] Environment Agency (2023) FT-SEP-23-4 – Technical Review: Controlled Waters Detailed Quantitative Risk Assessment and FT-SEP-23-5 – Technical Review: Phase 1 Delivery (Pre-Development) Remediation Strategy Associated with Planning Permission 137079/JO/2023, 3rd October 2023

Contaminant	RTM-calculated soil remediation target (mg/kg)	95th %ile of soil concentration within Red Bank Plateau(mg/kg)
Nickel	26.5	50
Zinc	191	500
Benzo(a)Pyrene	0.4	2.5
Fluoranthene	0.04	7
Anthracene	0.15	1.8
TPH – Aliphatic C8-C10	1910	9.9
TPH – Aliphatic C10-C12	14900	9.9
TPH – Aliphatic C12-C16	297000	17.9
TPH – Aromatic C8-C10	153	7.9
TPH – Aromatic C10-C12	76	31.2
TPH – Aromatic C12-C16	208	60.4
TPH – Aromatic C16-C21	323	85
TPH – Aromatic C21-C35	2453	200
TPH C8-C35	2500*#	
PFOS	8.17E-05	<0.002
PFOA	1.24E-05	<0.001

* RTM-calculated remediation criteria for several of the TPH fractions are far in exceedance of any soil concentrations. Any soils exceeding these criteria would be visibly grossly contaminated. Therefore, it was considered appropriate to set a soil remediation target for TPH C8-C35.

If exceedances of these values are noted, the risk-derived criteria for individual carbon bands detailed in this table shall be applied.

Table 34: Calculated re-use criteria for site-won soils placed within Zone 1

Figure 2 Table 34 from the DQRA Report

2. Proposed document amendments

No amendment is proposed to the Remediation Strategy, as this document already reflects the recommendations of the DQRA.

We propose to redact Table 4 of the RIP, as it was not the intention of the modelling presented in the DQRA for Zone 1 re-use criteria to be applied to all re-used materials, regardless of where they are placed.

The Remediation Strategy states that all re-used materials within Phase 1 will be chemically tested, in order to provide information on the ground conditions remaining after remediation.

It is proposed that the RIP is amended to state that re-used materials will be tested at a frequency of 1 per 500m^3 for the contaminants of concern (**Table 1** below). The data obtained through the testing of site-won materials will be collated for presentation within the final verification report for Phase 1.

Contaminant	Reference value (mg/kg)
Nickel	56
Zinc	2690
TPH C8-C35	1000
Fluoranthene	120
Anthracene	31
Benzo(a)pyrene	26
PFOS	<0.002
PFOA	<0.001

Table 1 Reference values for re-used made ground within Phase 1

The reference values listed in **Table 1** above will replace the values that are currently in Table 4 of the RIP. The reference values represent typical made ground, excluding outliers. They are the maximum concentrations measured in the made ground within the Phase 1 area of Red Bank Plateau, excluding data from areas which are to be remediated, as the soil in these areas was not typical of the made ground within Red Bank Plateau. If the test results for any site-won materials lie outside the envelope on which the contamination risk assessment was based (i.e. the reference values in **Table 1**), then the results will be reviewed to ensure that the risk assessment is still valid.

The re-use of materials will also be subject to the continued application of the discovery strategy set out in Section 4.13 of the RIP, to ensure that all site-won materials are inspected for signs of contamination, and are only re-used if they do not display any visual or olfactory evidence of contamination. The application of the reference values will also provide a mechanism to identify contaminants that do not present visual or olfactory evidence.

This approach does not weaken the protection to the River Irk, as there are no proposals to re-use made ground outside of Phase 1 in more sensitive locations and the assumptions of the DQRA are still valid. It also does not weaken the protection to human health, as the Remediation Strategy still requires developers to break the pathway between the made ground and future site users.

Separate proposals will be put forward for materials re-use within St. Catherine's Wood, which is to be redeveloped as planning Phase 2.

3. Next steps

The existing Remediation Strategy and RIP have been accepted by the Environment Agency as evidence supporting the discharge of Condition 7a of 137079/JO/2029 for Phase 1. If the proposals in this note are acceptable to the Environment Agency, this note will form an addendum to the RIP.

Given that earthworks have commenced on site, we would appreciate confirmation in writing at the earliest possible opportunity, that the proposed amendments in this note are acceptable to the Environment Agency.

ARUP

Job number	282022
Date	18 March 2024

DOCUMENT CHECKING

	Prepared by	Checked by	Approved by
Name	Del Harrison	Colin Reader	Jenny Lightfoot
Signature	[redacted]		

Appendix C

Preliminary works

C.1 Invasive species

VICTORIA NORTH
JAPANESE KNOTWEED
VALIDATION REPORT

Job Number: IPM 21 1024
Date of Report: 24th May 2024
Client: BAM Nuttall



INCREASING LAND VALUE

LK GROUP

DOCUMENT VERIFICATION

Site Address	Site off Hargreaves Street, Manchester, M4 4EJ		
Job Title	Manchester Victoria North		
Document Title	Japanese Knotweed Validation Report		
Job Number	IPM 21 1024	**Document Ref.**	IPM211024
Date Issued	24th May 2024	**Report Version**	001
Prepared By	Lee Worrall	**Signature**	[redacted]
Reviewed By	Dene Marland	**Signature**	

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INTRODUCTION

1.1 Background

The LK Group was asked to provide a survey, management plan and method statement for Japanese Knotweed (JK) within the site of the proposed residential development at Hargreaves Street, Manchester.

1.2 Site Details

Following receipt of McCafferty Consulting Limited, Drawing No. MCL/BAM2201/004 indicating the suspected presence of Japanese Knotweed on site, The LK Group conducted an initial site survey on the 10th of June 2022 to review locations and quantities affected by the infestation.

A second site survey was conducted on 3rd October 2023 to revisit areas to be included in the works. Two new areas of Japanese Knotweed were identified JK6, JK7 and areas JK1, JK3, JK4 and JK5 were removed from the programme of works (indicated in red).

The areas of Japanese Knotweed included in the works are on Figure 1 below.
The Japanese Knotweed present is across the site in the below locations:

1.2.1 Figure 1: Invasive Plant Survey

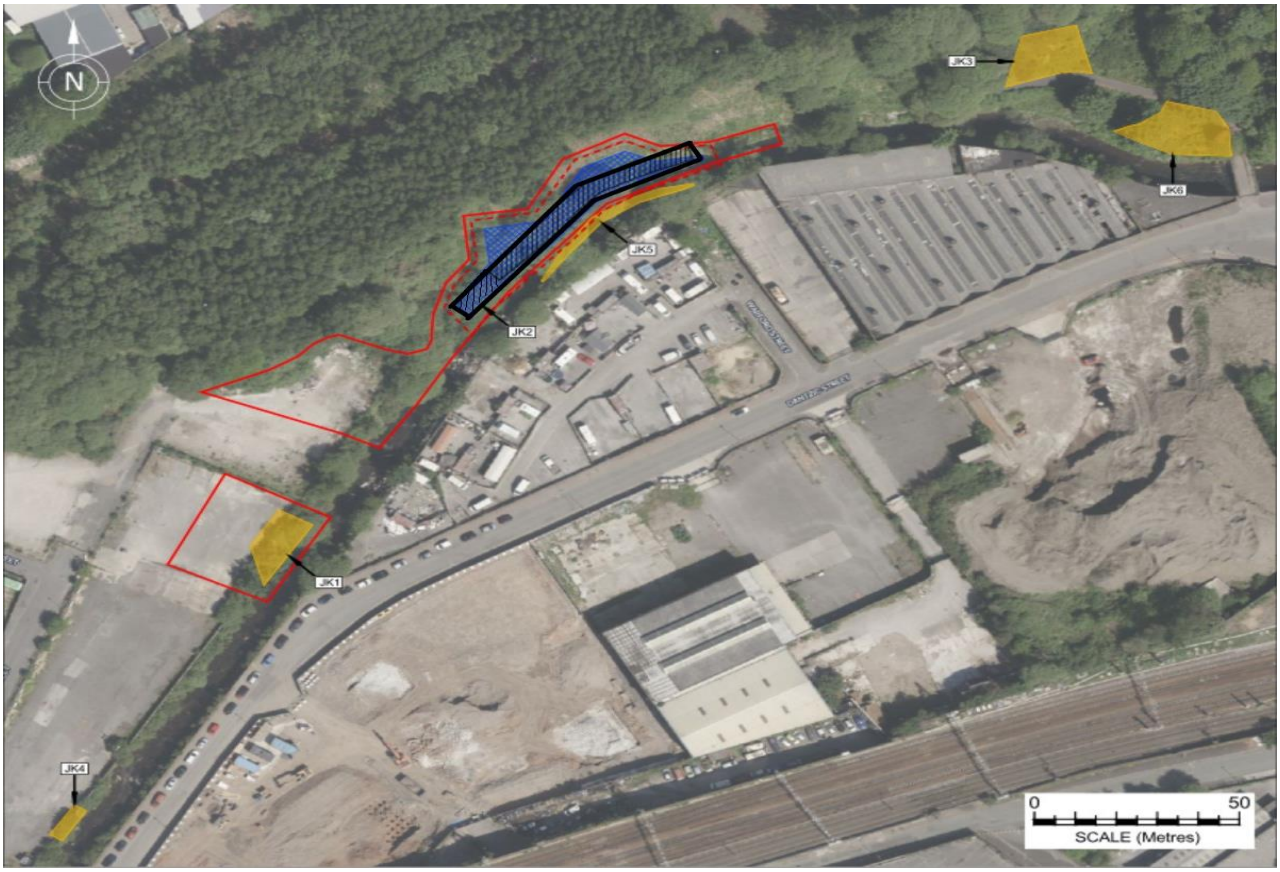


Figure 1: Please refer to KMP for full detail of plan

1.3 Plant Description

JK or *Fallopia japonica* is an herbaceous perennial which forms large clumps 1-3 metres high. It is fully dioecious and can reproduce by seed (however not in this country) and by large rhizomes which may reach a length of 5-6 metres. A very small fragment of the rhizome, as little as the size of a finger nail, can potentially regenerate a whole new plant.

The stout stems are hollow and bamboo-like, extend from an erect base and are simple or little branched and glabrous with thinly membranous sheaths. Leaves are broadly ovate, truncate to cuneate at base, abruptly cuspidate, 5-15 cm long, 5-12 cm broad, with petioles 1-3 cm long.

1.4 Legislation

Section 14(2) of the Wildlife and Countryside Act 1981 (WCA 1981) states that “if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.” Japanese knotweed is one of the plants listed in the Schedule. Anyone convicted of an offence under Section 14 of the WCA 1981 may face a fine of £5,000 and/or 6 months imprisonment, or 2 years and/or an unlimited fine on indictment.

The Environmental Protection Act 1990 (EPA 1990) contains a number of legal provisions concerning “controlled waste”, which are set out in Part II. Any Japanese knotweed contaminated soil or plant material that you discard, intend to discard or are required to discard is likely to be classified as controlled waste.

The most relevant provisions are in: section 33 (1a) and (1b) which create offences to do with the deposit, treating, keeping or disposing of controlled waste without a licence. Exemptions from licensing are available in some circumstances, and are set out in Schedule 3 to the Waste Management Licensing Regulations 1994 as amended (the WMLR 1994) s.33 (1c) which makes it an offence to keep, treat or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health.

Section 34 places duties on any person who imports, produces, carries, keeps, treats or disposes of controlled waste. Waste must be handled responsibly and in accordance with the law at all stages between its production and final recovery or disposal.

Waste must be transferred to an authorised person, in other words a person who is either a registered carrier or exempted from registration by the Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991. A waste transfer note must be completed and signed giving a written description of the waste, which is sufficient to enable the receiver of the waste to handle it in accordance with their own duty of care.

The provisions concerning waste transfer notes are set out in the Environmental Protection (Duty of Care) Regulations 1991 (as amended). Failure to comply with these provisions is an offence.

2 METHODOLOGY

2.1 Proposed Management Plan

The recommended management plan is to undertake a “controlled excavation” of the material within the development area and remove this material to a segregated stockpile within the IPC working compound indicated on Figure 2 below.

The impacted stockpile will be removed from site via licenced haulier to a licensed waste facility.

We will also install a geo-textile root barrier membrane at the angel of safe batter along the east-ern boundaries (behind the retaining wall) to provide additional protection form any off site areas of Japanese knotweed.

The works are also followed by a 4-year spraying and monitoring programme where any remaining Japanese Knotweed is treated with herbicide.

Please see the method statement within this document to provide further details of the method of removal / treatment.

2.2 Summary of works

Works re- commenced at 7.30am on 6th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Exacavation of Himalayan Balsam commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 7th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Excavation of Himalayan Balsam continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 8th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Demarcation of JK02 completed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 13th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Supervision of tree removal commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 14th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Supervision of tree removal works continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 15th November 2023:
On site were an LK operative and a BAM excavator and dumper operator:
Excavation of Himalayan Balsam completed.
Supervision of tree removal works completed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 4th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavator and dumper delivered.
Fencing, signage bio-security measures installed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 5th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 commenced, arisings stockpiled in LK compound.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 6th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK06 and JK07 commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 7th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 8th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 11th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 12th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 13th December 2023:
On site were an LK operative and an excavator and dumper operator:
2nd excavator and dumper delivered.
Disposal of Japanese Knotweed impacted soils commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 14th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK06 and JK07 completed.
Installation of geo-textile/backfill as per MS specification commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 15th December 2023:
On site were an LK operative and an excavator and dumper operator:
Edge protection installed.
Excavation of JK02 continued.
Disposal of JK impacted soils continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 18th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Disposal of JK impacted soils continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 19th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Disposal of JK impacted soils continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 20th December 2023:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Disposal of JK impacted soils continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 21st December 2023:
On site were an LK operative and an excavator and dumper operator:
Plant and compound secured for Christmas break.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 9th January 2024:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 10th January 2024:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 11th January 2024:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 12th January 2024:
On site were an LK operative and an excavator and dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 9th January 2024:
On site were an LK operative, 2 excavator operators and a dumper operator:
Second excavator delivered.
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 10th January 2024:
On site were an LK operative, 2 excavator operators and a dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 11th January 2024:
On site were an LK operative, 2 excavator operators and a dumper operator:
Excavation area civilised due to ground conditions.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 12th January 2024:
On site were an LK operative, 2 excavator operators and a dumper operator:
Excavation of JK02 continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 15th January 2024:
On site were an LK operative, 2 excavator operator and a dumper operator:
Excavation of JK02 continued.
Grip installed.
Geo-textile installation/backfill as per MS specification commenced.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 16th January 2024:
On site were an LK operative, 2 excavator operator and a dumper operator:
Excavation of JK02 continued.
Disposal of JK impacted soils continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 17th January 2024:
On site were an LK operative, 2 excavator operator and a dumper operator:
Excavation of JK02 continued.
Geo-textile installation/backfill as per MS specification continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 18th January 2024:
On site were an LK operative, 2 excavator operator and a dumper operator:
Excavation of JK02 continued.
Geo-textile installation/backfill as per MS specification continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 19th January 2024:
On site were an LK operative, 2 excavator operator and a dumper operator:
Roller and compaction plate delivered.
Excavation of JK02 continued.
Geo-textile installation/backfill as per MS specification continued.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 22nd January 2024:
On site were an LK operative, 2 excavator operator and a dumper/roller operator:
Excavation of JK02 completed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 23rd January 2024:
On site were an LK operative, 2 excavator operator and a dumper/roller operator:
Installation of geo-textile completed.
First 250mm of backfill completed.
Compaction of 250mm completed by roller and compactor plate (within 1m of wall)
Second 250mm of backfill commenced.
Edge protection un-installed / re-installed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 24th January 2024:
On site were an LK operative, 2 excavator operator and a dumper/roller operator:
Disposal of JK impacted soils continued.
Second 250mm of backfill completed.
Compaction of 250mm completed by roller and compactor plate (within 1m of wall)
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 25th January 2024:
On site were an LK operative, 2 excavator operator and a dumper/roller operator:
Disposal of JK impacted soils continued.
Scrape of LK compound completed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 26th January 2024:
On site were an LK operative, 2 excavator operator and a dumper/roller operator:
Disposal of JK impacted soils completed.
Decontamination of plant completed.
Works completed at 4.00pm, site left safe and tidy.

Works re- commenced at 7.30am on 29th January 2024:
On site were an LK operative.
Collection of plant completed.
Decontamination of plant completed.
All works completed at 4.00pm, site left safe and tidy.

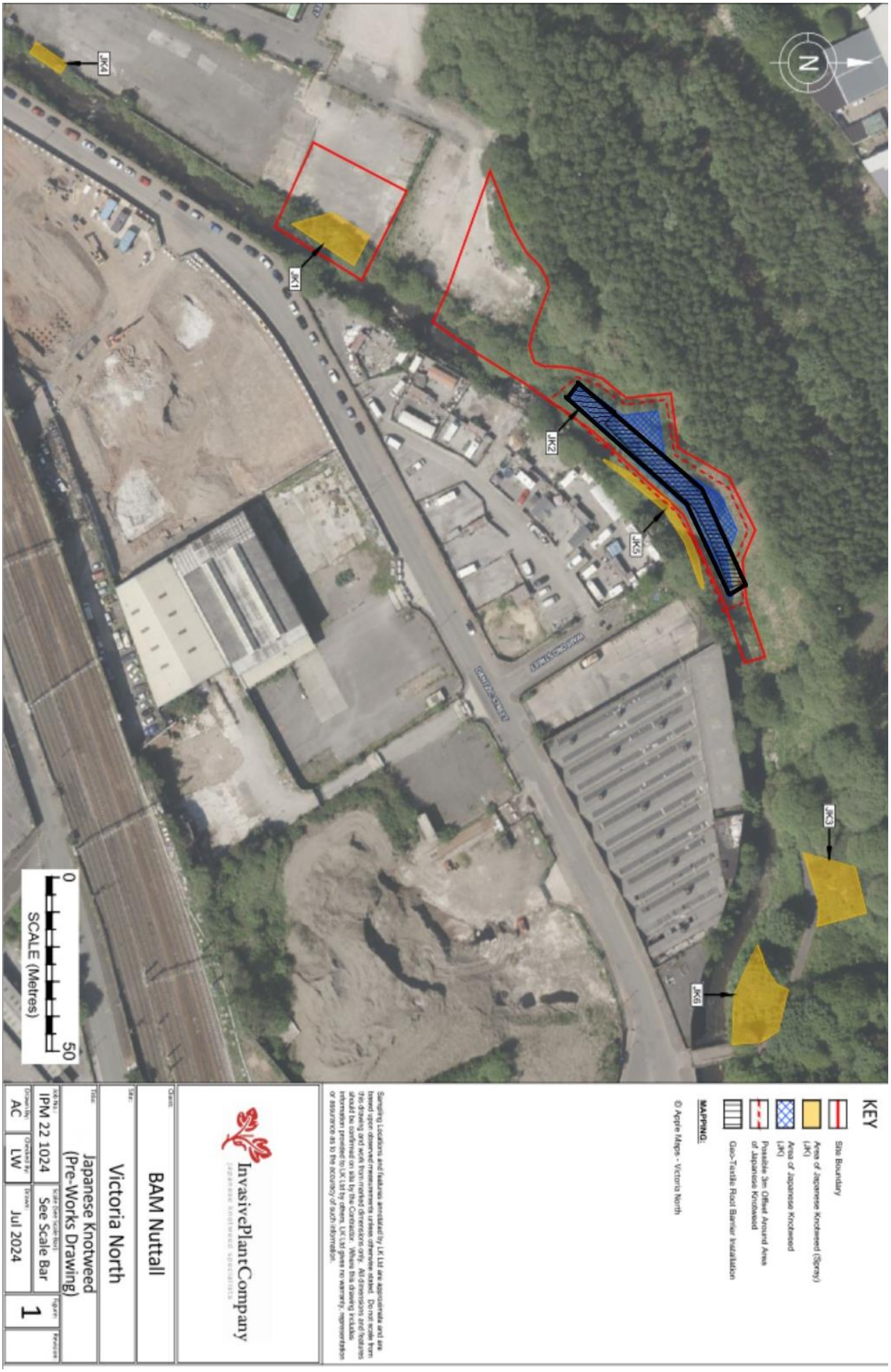
2.3 Post Completion

We will continue to monitor the area and treat any Japanese Knotweed re-growth on site for a period of 4 years. We will issue reports and photographs following each visit.

Please note that the root barrier membrane installed to the excavation is not to be disturbed and if there is any inadvertent disturbance, please contact the author of this report so we may look to inspect and repair any damage.

3 APPENDICIES

3.1 Appendix A – Pre-Works Drawing


N
JK1
JK2
JK3
JK4
JK5
JK6
0
50
SCALE (Metres)
KEY
Site Boundary
Areas of Japanese Knotweed (Spray) (JK)
Areas of Japanese Knotweed (JK)
Possible 3m Offset Around Area of Japanese Knotweed
Geo-Textile Root Barrier Installation
MAPPING:
© Apple Maps - Victoria North
Sampling Locations and features annotated by LK Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Whilst this drawing includes information provided by LK Ltd by others, LK Ltd gives no warranty, representation or assurance as to the accuracy of such information.
InvasivePlantCompany
Japanese knotweed specialists
Client:
BAM Nuttall
Site:
Victoria North
Title:
Japanese Knotweed (Pre-Works Drawing)
Job No.:
IPM 22 1024
Scale (see scale bar):
See Scale Bar
Figure:
1
Revision:
Drawn By:
AC
Checked By:
LW
Drawn:
Jul 2024

3.2 Appendix B – Operational Photos

	
Excavation of Himalayan Balsam.	**Excavation of Himalayan Balsam completed.**
	
Demarcation of JK02.	**Demarcation of JK02.**
	
Supervision of tree removal within JK02 commenced.	**Supervision of tree removal within JK02 completed.**



Excavation of JK06 and JK07 commenced,



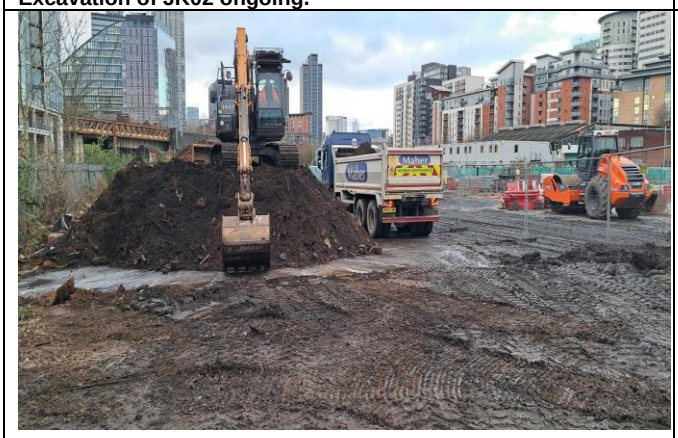
Excavation of JK02 commenced.



Excavation of JK02 ongoing.



Stockpile of JK impacted soils.



Disposal of JK impacted soils commenced.



Excavation of JK06 and JK07 completed.



Excavations ongoing and edge protection.



Excavations ongoing.



Installation of grip commenced as per BAM instruction.



Installation of geo-textile/first 250mm backfill commenced.



Excavation of JK02 ceased following morning site briefing



Snow clearing and gritting to enable muckshift to continue.



Compaction of first 250mm layer of backfill



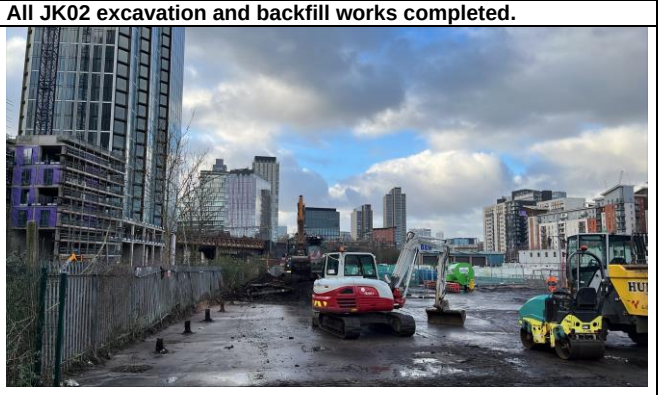
Installation of geo-textile completed.



Backfill of second 250mm layer completed.



Compaction of second 250mm backfill layer.

	
Disposal of JK impacted soils completed.	**All JK02 excavation and backfill works completed.**
	
Decontamination of plant.	**Final tidy and completion.**

3.3 Appendix B – Waste Transfer Notes, Waste Carrier Licence and Landfill Permits

C.2 Borehole decommissioning

Victoria North HiF Borehole Decommissioning

Factual Account of Borehole Decommissioning





June 2025
BAM Ritchies Project Reference: RGN.331B-3a

Control sheet

Project Name:	Victoria North NT Borehole Decommissioning
Project No:	RGN.331B-3a
Client:	Homes England Housing Infrastructure Fund
Engineer:	BAM Nuttall Ltd
Status:	FINAL
Revision No:	01

Authorisation

	Name	Signature	Date
Prepared by	S Morrell	[redacted]	25/06/2025
Checked by	B Shangase		25/06/2025
Approved for issue by	J Hogg		25/06/2025

Distribution

Copy	To	Controlled / Uncontrolled	Date of Issue
01	BAM Nuttall	Controlled	25/06/2025

Revision History

Revision Reference	Revision Description	Date
00	DRAFT	05/06/2024
01	FINAL	25/06/2025

Note
The scope of the investigation was determined by the Engineer for the particular project requirements set out in the Specification for the Contract. The decommissioning works were carried out by BAM Ritchies and this report has been prepared for the sole use of the Client. This report shall not be relied upon or transferred to any other parties without the express written authorisation of BAM Ritchies.

This report has been produced by BAM Ritchies
5 Taurus Park, Europa Boulevard; Gemini Business Park; Warrington; WA5 7ZT. Tel:01925 405178

BAM Ritchies is an operating division of BAM Nuttall Ltd, Registered Office, St James House, Knoll Road, Camberley, Surrey GU15 3XW. Registered Number 305189 England and Wales.

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Control sheet **1**

1.0 Introduction **1**

2.0 The site and geology **2**

2.1 Site description 2
2.2 Geology 2

3.0 Fieldwork **3**

3.1 General 3
3.2 Borehole decommissioning 3

Tables

1 Fieldwork summary

Figures

1 Site Location Plan
2 Decommissioned Borehole Location Plan

Appendices

1a Key to decommissioning logs
1b Decommissioning logs & photographs

1.0 Introduction

In April 2024, BAM Ritchies was commissioned by BAM Nuttall on behalf of Manchester City Council (MCC) to decommission groundwater/ground gas monitoring installations at the Victoria North HiF site in Collyhurst, Manchester as part of ongoing enabling works.

A range of monitoring installations were present on site from previous phases of ground investigation. These installations were decommissioned in order to remove potential pathways for on-site contamination to reach underlying aquifers. All positions were decommissioned in accordance with 2012 EA guidelines: Well Type C – Low Permeability Backfill as instructed by the Engineer.

The works involved using a cable percussive rig to drill out the monitoring installations and insert casing to keep the hole open. As the casing was removed, a grout mixer pumped cement grout into the hole, from the base of the old monitoring installation to ground level.

The scope of the works, which was specified by Arup, comprised the following;

- Fifteen groundwater/ground gas monitoring installations decommissioned to a maximum depth of 23.00m (BH301C).

This report presents the factual records of the fieldworks. The report has been prepared in accordance with BS5930:2020[1] and the requirements of the Client.

1 BS 5930 Code of practice for ground investigations

2.0 The site and geology

2.1 Site description

The site is centred on National Grid Reference (NGR) SJ846996 and lies in the Lower Irk Valley, Collyhurst, Manchester. The site is bound to the northwest and west by Red Bank (public road) and a steep embankment slope with varied commercial properties beyond, to the northeast by a historical pedestrian railway bridge, to the east and south by the River Irk. The site is split into 3nr sub sites.

- Red Bank Plateau (extends from NGR SJ843994 in the south to NGR SJ848998 in the north); Formerly occupied by extensive railway sidings and associated infrastructure. A former gas works was noted in the northeastern corner.
- Red Bank Viaduct (centred around NGR SJ844994); predominantly hardstanding occupied by multiple car parking businesses, taxi service, joinery warehouse, dry cleaners and food warehouse.
- St Catherine's Wood (extends from NGR SJ844994 in the south to NGR SJ849997 in the north); predominantly covered with dense woodland with limited access footpaths which run adjacent to the banks of the River Irk. Steep slopes descend from the Red Bank Plateau towards the River Irk through the dense woodland.

Figure 1 shows the location of the site within the region.

2.2 Geology

Information from the BGS indicates bedrock underlaying the western section of the site is composed of Sandstone of the Chester Formation. Mudstone of the Manchester Marls Formation is recorded underlying the eastern section of the site.

Superficial Deposits are recorded as overlying the solid geology in the form of Glacial Till (Diamicton).

3.0 Fieldwork

3.1 General

The scope of the works was determined by Arup. Fieldwork was carried out between 29 April and 11 July 2024.

3.2 Borehole decommissioning

The monitoring installations to decommission were set out by a BAM Nuttall site engineer. A Dando 3000 cable percussive drilling rig was used to over-drill the existing monitoring installations, then a Putzmeister SP 11 TMR pumped cement bentonite grout into the open hole, up to ground level. A concrete cap was installed at ground level for positions located on hardstanding. As-built co-ordinates were then taken by a BAM Nuttall site engineer. Please refer to logs in Appendix 1 for specific details.

The positions are shown on the exploratory hole plan which comprises Figure 2.

The decommissioned installations are summarised in Table 1.

The decommissioning logs & photographs are presented in Appendix 1.

Tables

1 Fieldwork summary

TABLE 1 - FIELDWORK SUMMARY

Project Name:	Victoria North HiF Decommissioning	Client:	Homes England Housing Infrastructure Fund
Project No:	331B-3a	Engineer:	BAM Nuttall

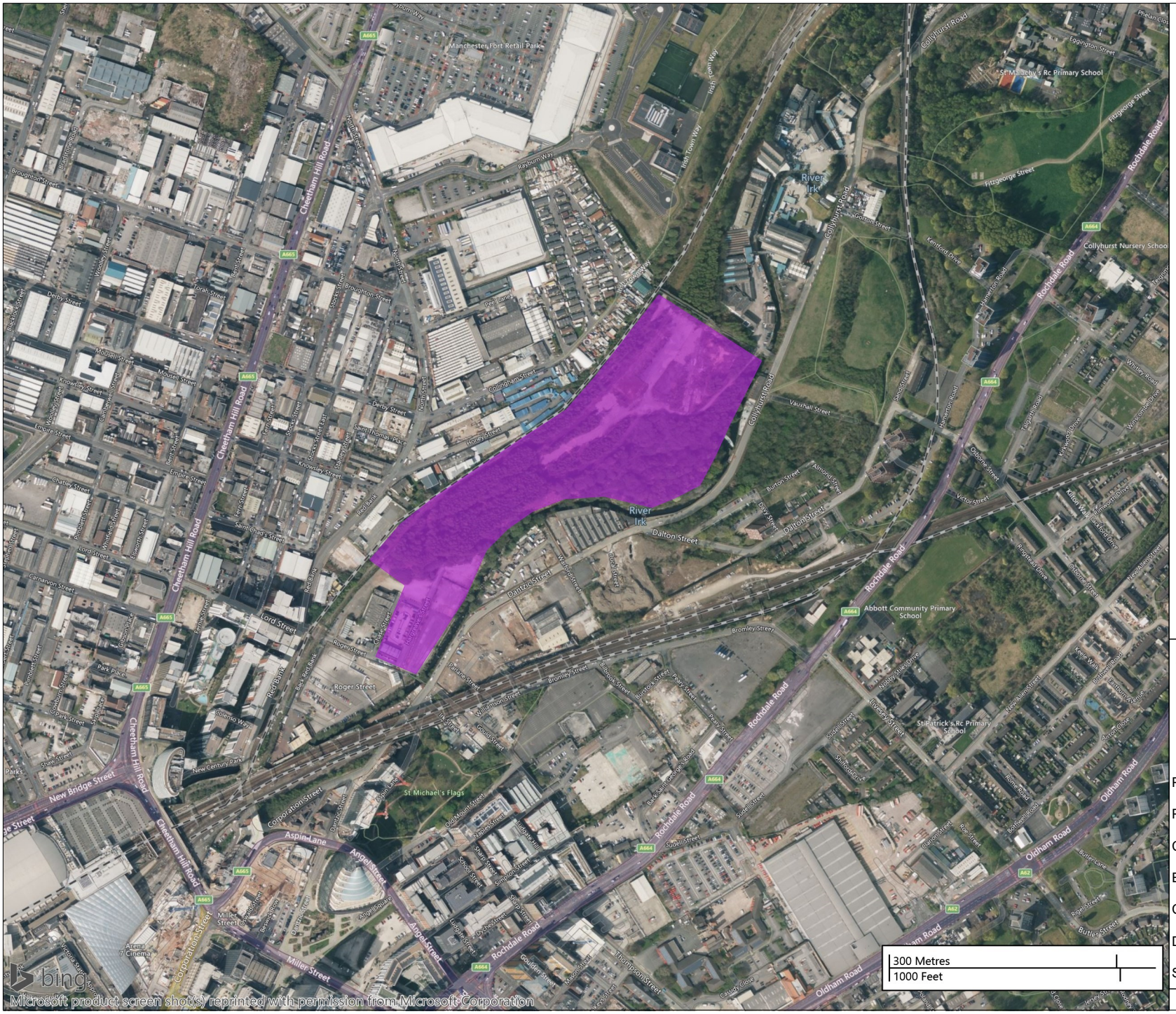
BACKFILL DETAILS

Hole No	From (mbgl)	To (mbgl)	Date Backfilled		Description	As built coordinates		
			Start	End		Easting	Northing	GL (mAOD)
BH102	0.00	6.50	29/04/2024	29/04/2024	Cement bentonite grout	384763.18	399691.37	39.39
BH103	0.00	3.50	29/04/2024	29/04/2024	Cement bentonite grout	384689.01	399695.58	41.14
BH206	0.00	6.00	29/04/2024	29/04/2024	Cement bentonite grout	384729.23	399690.75	42.72
BH207	0.00	15.50	29/04/2024	29/04/2024	Cement bentonite grout	384654.24	399626.10	40.43
BH209	0.00	17.00	30/04/2024	30/04/2024	Cement bentonite grout	384548.84	399628.33	39.90
BH301	0.00	15.00	10/07/2024	10/07/2024	Cement bentonite grout	384858.28	399760.46	41.61
BH301C	0.00	23.00	11/07/2024	11/07/2024	Cement bentonite grout	384846.00	399748.92	40.51
BH302	0.00	11.00	10/07/2024	10/07/2024	Cement bentonite grout	384826.88	399705.56	42.77
BH303	0.00	11.00	10/07/2024	10/07/2024	Cement bentonite grout	384417.22	399555.76	45.22
BH306	0.00	5.60	30/04/2024	30/04/2024	Cement bentonite grout	384520.14	399490.62	31.45
BH309	0.00	11.50	02/05/2024	02/05/2024	Cement bentonite grout	384863.86	399641.31	30.50
BH310	0.00	16.00	01/05/2024	01/05/2024	Cement bentonite grout	384838.08	399638.17	32.60
BH315	0.00	12.50	30/04/2024	30/04/2024	Cement bentonite grout	384889.76	399761.35	39.26
BH321	0.00	4.50	01/05/2024	01/05/2024	Cement bentonite grout	384770.33	399639.02	34.20
BH322	0.00	5.80	01/05/2024	01/05/2024	Cement bentonite grout	384715.20	399587.27	32.49

For Abbreviations see Key to Exploratory Hole Records

Figures

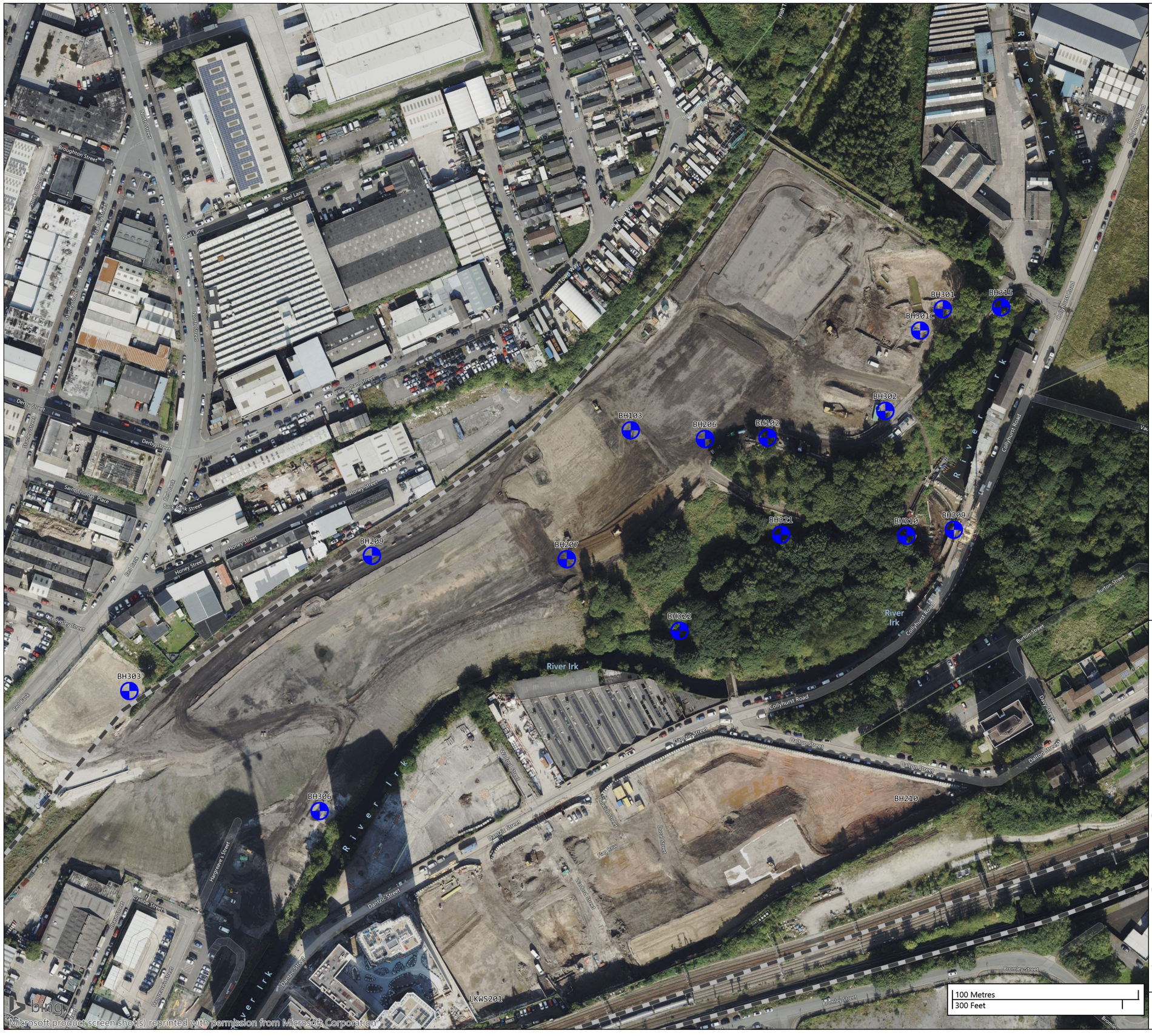
1 Site Location Plan
2 Decommissioned Borehole Location Plan



bam ritchies

SITE PLAN

Project Name:	Victoria North HiF Decommissioning
Project No:	331B-3a
Client:	Homes England Housing Infrastructure Fund
Engineer:	BAM Nuttall
Contractor:	BAM Ritchies
Date:	03/06/2024
Scale:	1:7000



Legend Key

Locations By Type - CP

Figure No 331B-3a/2

bam ritchies

Exploratory Hole Locations

Project Name:	Victoria North HiF Decommissioning
Project No:	331B-3a
Client:	Homes England Housing Infrastructure Fund
Engineer:	BAM Nuttall
Contractor:	BAM Ritchies
Date:	25/06/2025
Scale:	1:2000

BAM R Hole Location Plan A3 Landscape Fig 09/09/2016

Appendices

Appendix 1

1a Key to decommissioning logs
1b Decommissioning logs & photographs

KEY TO EXPLORATORY HOLE RECORDS

LOCATION TYPES
(abbreviations based on AGS 4.0 : 2011)

CP	Cable percussion	PM	Pressuremeter test hole
DCP	Dynamic cone penetrometer	RC	Rotary cored
DP	Dynamic probe sampling	RO	Rotary open hole
EXP	Logged exposure	SCP	Static cone penetrometer
HA	Hand Auger	SNC	Sonic core drilling
ICBR	In situ CBR test	TP	Trial pit/trench
IDEN	In situ density test	TRAV	Linear logging traverse or scanline survey
INST	instrument	VC	Vibrocore
IP	Inspection pit	W	Wash boring
IRDX	In situ redox test	WLS	Dynamic (windowless) sampler
IRES	In situ resistivity	WS	Window Sampler
IVAN	In situ vane test	CC	Concrete core
OP	Observation pit/trench	IPLT	In situ plate loading test

SAMPLES
(abbreviations based on AGS 4.0 : 2011)

AMAL	Amalgamated sample	L / Liner	Window Sample Liner Sample
B	Bulk disturbed sample	LB	Large bulk disturbed sample
BLK	Block sample	P	Piston sample
C	Core sample	TW	Thin walled push in sample
CBR	CBR mould sample	U	Undisturbed sample - open drive
D	Small disturbed sample	UT	Thin wall open drive tube sampler
ES	Soil sample for environmental testing (suite of containers)	W	Water sample
EW	Water sample for environmental testing (suite of containers)	G	Gas sample
RC	Rotary Core Run	NR	No recovery
WS(1)	Window Sample Run No.	D-NR	No recovery from SPT

IN SITU TESTS

SPT S or SPT C	Standard Penetration Test, open shoe (S) or solid cone (C) Incremental blow count / penetration given on Borehole Hole Information Sheet Summary result given on borehole log as N value, N=**, where the full test drive of 300mm is reached otherwise as blow count/penetration in mm. Detailes result, Self Weight Penetration and Hammer Energy Ratio given on Borehole Information Sheet
BHV	Borehole Vane Test - result given as peak(remoulded)
HV	Hand Vane Test - result given as peak(remoulded)
PP	Pocket Penetrometer Test, result given as shear strength
kBFH	Borehole Falling Head Permeability Test
kBRH	Borehole Rising Head Permeability Test
kBCH	Borehole Constant Head Permeability Test
kBPT	Borehole Contant Head Packer Permeability Test
kSPFH	Standpipe/Piezometer Falling Head Permeability Test
kSPRH	Standpipe/Piezometer Rising Head Permeability Test
kSPCH	Standpipe/Piezometer Constant Head Permeability Test
Soak	Soakaway Test
Eh	Redox Potential Test
Rs	Resistivity Test
SRDS	Sand Replacement Density Test, Small Pouring Cylinder
SRDL	Sand Replacement Density Test, Large Pouring Cylinder
CCD	Core Cutter Density Test
DCP	CBR from Dynamic Cone Penetrometer (DMRB HD29/08 Section 7.27)
CBR	In situ CBR apparatus (BS1377-9:1990 Section 4.3)
MEX	Mexecone

KEY TO EXPLORATORY HOLE RECORDS

CORE RECORDS
(abbreviations based on BS5930:2015)

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
If min	Minimum Fracture Spacing
If ave	Average Fracture Spacing
If max	Maximum Fracture Spacing
FI	Fracture Index - number of fractures per metre
CRF	Core recovered in the following run given in detailed description
AZCL	Assessed zone of core loss
NR	No recovery
NI	Non-intact

In inclined boreholes depth is measured along the core axis and dips are given with respect to the normal to the core axis The assessment of SCR, ROD and Fracture Spacing excludes artificial fractures

FLUSH Flush type, returns percentage and colour given on Borehole Information Sheet

GROUNDWATER Details are given on Borehole Hole Information Sheet



Groundwater strike

Groundwater level after standing period

Groundwater strike where level rise recorded after entry.

INSTALLATIONS Type and details of installation and backfill are given on Borehole Hole Information Sheet
(based on AGS 4.0 : 2011)

EPIE	Electronic Piezometer	ICM	Inclinometer - Manual
ETM	Magnetic Extensometer	PPIE	Pneumatic Piezometer
ETR	Rod Extensometer	SLIP	Slip indicator
ETT	Tape Extensometer	SP	Standpipe
HPIE	Hydraulic piezometer	SPIE	Standpipe piezometer
ICE	Inclinometer		

Notes

Soils and rocks are described in accordance with BS EN ISO 14688-1 : 2002, 14688-2 : 2004, 14689-1 : 2003 and BS 5930 :2015

References

AGS: 2011 Electronic Transfer of Geotechnical and Geoenvironmental Data AGS4

BS EN ISO 14688-1 : 2002: Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description. BSI

BS EN ISO 14688-2: 2004: Geotechnical investigation and testing - Identification and classification of soil - Part 2 Principles for a classification. BSI

BS EN ISO 14689-1 : 2003: Geotechnical investigation and testing - dentification and classification of rock - Part 1 Identification and description. BSI

BS EN ISO 22476-3 : 2005 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test. BSI

BS 1377-9:1990, Methods of test for soils for civil engineering purposes – Part 9: In-situ tests. BSI

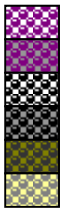
BS 5930 : 2015 Code of Practice for site investigations. British Standards Institution. BSI

The Highways Agency : 2008 : Volume 7 Section 3 Part 2 HD29/08. Testing at Investigation Sites

KEY TO EXPLORATORY HOLE RECORDS
Network Rail Legend Codes

1 BALLAST

a) With no subgrade erosion



1 Clean Ballast
2 Slightly Dirty Ballast
3 Dirty Ballast
4 Very Dirty Ballast (non-cohesive)
5 Very Dirty Ballast (cohesive)
6 Very dirty ballast (slurried)

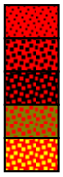
b) With subgrade erosion



7 Slurried Ballast < 10% fines
8 Slurried Ballast > 10% fines
9 Ballast – Voids filled with silt/fine sand
10 Ballast – Voids Filled with soft/firm clay

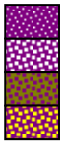
2 TRACKBED LAYERS/FILLS

a) Derived from naturally occurring Sands and Gravels.(% refers to clay/ silt content)



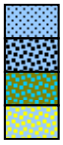
11 Fine/Medium Sand (<5%)
12 Coarse Sand (<5%)
13 Sand and Gravel (<5%)
14 Clayey/silty Sand and/or Gravel (5 to 20%)
15 Slurried Sand and/or Gravel (5 to 20%)

b) Quarry Products



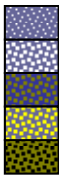
16 Stone dust (<5%)
17 Coarse Crushed stone aggregate (<5%)
18 Clayey/silty Crushed Stone Aggregate (5 to 20%)
19 Slurried Crushed Stone Aggregate

c) Ash



20 Fine ash (sand sized) (<5%)
21 Coarse ash (gravel sized) (<5%) and
22 Clayey/silty Ash (5 to 20%)
23 Slurried Ash

d) Other granular trackbed materials



24 Fine grained, susceptible to erosion (<5%)
25 Coarse Granular Layer (<5%)
26 Clayey/silty Granular Layer (5 to 20%)
27 Slurried Granular Layer
28 Any of 2 a-d in a clay matrix (20 to 50%)

3 SUBGRADE

Use legends from section 2 where appropriate,

legend with bold outline indicates natural ground

a) Homogenous Fine Soils (Clay and Silt)



31 Organic/Very Soft
32 Soft Cu < 40kN/m^2
33 Firm Cu = 40 to 75kN/m^2
34 Stiff Cu = 75 to 150kN/m^2
35 Very Stiff / Hard / Very weak Mudstone Cu > 150kN/m^2

b) Mixed (Fine and Coarse) Soils



36 Unstratified (clayey/silty Coarse Soil OR sandy or gravely Fine Soil)
37 Interbedded or weathered/ weakly cemented fine grained rocks

c) Rock or Rockfill



38 Weak fine grained (mudstone, limestone, chalk, fine sandstone)
39 Moderately strong to hard rock

4 PITCHING LAYERS



29 Clean pitching
30 Slurried Pitching

5 SAMPLE LOSS IN ABS



0x Soil penetrated by ABS, but not recovered
0d Soil displaced by ABS – indicative of very soft soil

6 ADDITIONAL INFORMATION

g – permeable geotextile separator
c – permeable geocomposite
m – reinforcing mesh (geogrid)
p – impermeable membrane (polythene)
h - impermeable geocomposite
w – water level (wet samples)
ws – standing water (recorded in drill hole)
hs – historical slurrying
34 – shear strength kN/m^2
e – likely chemical contamination
L - >10 % limestone ballast

KEY TO EXPLORATORY HOLE RECORDS

101 - TOPSOIL	
102 - MADE GROUND	
103 - Bituminous Material	
104 - CONCRETE	
201 - CLAY	
202 - Silty CLAY	
203 - Sandy CLAY	
204 - Gravelly CLAY	
205 - Cobbly CLAY	
206 - Bouldery CLAY	
207 - Silty sandy CLAY	
208 - Silty gravelly CLAY	
209 - Silty cobbly CLAY	
210 - Silty bouldery CLAY	
211 - Silty sandy gravelly CLAY	
212 - Silty sandy cobbly CLAY	
213 - Silty sandy bouldery CLAY	
214 - Silty sandy gravelly cobbly CLAY	
215 - Silty sandy gravelly bouldery CLAY	
216 - Silty sandy gravelly cobbly bouldery CLAY	
217 - Silty sandy organic CLAY	
218 - Silty sandy gravelly organic CLAY	
219 - Silty organic CLAY	
220 - Sandy gravelly CLAY	
222 - Sandy cobbly CLAY	
223 - Sandy bouldery CLAY	
224 - Sandy gravelly cobbly CLAY	
225 - Sandy gravelly bouldery CLAY	
226 - Sandy gravelly cobbly bouldery CLAY	
228 - Sandy gravelly organic CLAY	
229 - Organic CLAY	
230 - Gravelly cobbly CLAY	
231 - Silty gravelly cobbly CLAY	
301 - SILT	
302 - Clay/Silt	
303 - Sandy SILT	
304 - Gravelly SILT	
305 - Organic SILT	
309 - Clayey sandy SILT	
310 - Sandy gravelly SILT	
314 - Clayey sandy gravelly organic cobbly SILT	
316 - Sandy cobbly SILT	
317 - Sandy bouldery SILT	
318 - Sandy organic SILT	
319 - Sandy gravelly organic SILT	
320 - Sandy gravelly cobbly SILT	
321 - Sandy gravelly organic cobbly SILT	
322 - Gravelly cobbly SILT	
323 - Gravelly bouldery SILT	
324 - Gravelly organic SILT	

KEY TO EXPLORATORY HOLE RECORDS

325 - Gravelly organic cobbly SILT	
326 - Cobbly SILT	
327 - Cobbly bouldery SILT	
328 - Organic cobbly SILT	
331 - Bouldery SILT	
401 - SAND	
402 - Clayey SAND	
403 - Silty SAND	
404 - Gravelly SAND	
405 - Cobbly SAND	
406 - Bouldery SAND	
410 - Clayey gravelly SAND	
411 - Clayey gravelly cobbly SAND	
412 - Silty gravelly SAND	
413 - Silty gravelly cobbly SAND	
414 - Silty gravelly cobbly bouldery SAND	
415 - Gravelly cobbly SAND	
416 - Gravelly cobbly bouldery SAND	
417 - Gravelly bouldery SAND	
418 - Cobbly bouldery SAND	
430 - SAND and GRAVEL	
431 - Organic SAND	
433 - Silty organic SAND	
434 - Gravelly organic SAND	
435 - Cobbly organic SAND	
436 - Bouldery organic SAND	
501 - GRAVEL	
502 - Clayey GRAVEL	
503 - Silty GRAVEL	
504 - Sandy GRAVEL	
505 - Organic GRAVEL	
506 - Cobbly GRAVEL	
507 - Bouldery GRAVEL	
509 - Clayey sandy GRAVEL	
510 - Clayey cobbly GRAVEL	
511 - Clayey bouldery GRAVEL	
512 - Clayey organic GRAVEL	
513 - Clayey sandy cobbly GRAVEL	
517 - Clayey sandy organic GRAVEL	
520 - Silty sandy GRAVEL	
521 - Silty cobbly GRAVEL	
522 - Silty bouldery GRAVEL	
523 - Silty organic GRAVEL	
524 - Silty organic sandy GRAVEL	
525 - Sandy cobbly GRAVEL	
526 - Sandy bouldery GRAVEL	
527 - Sandy organic GRAVEL	
528 - Silty sandy cobbly GRAVEL	
601 - PEAT	
602 - Clayey PEAT	

KEY TO EXPLORATORY HOLE RECORDS

603 - Silty PEAT	
604 - Sandy PEAT	
605 - Gravelly PEAT	
606 - Cobbly PEAT	
608 - Clayey sandy PEAT	
609 - Clayey gravelly PEAT	
612 - Silty sandy PEAT	
613 - Silty sandy gravelly PEAT	
614 - Sandy gravelly PEAT	
701 - COBBLES	
702 - Clayey COBBLES	
703 - Silty COBBLES	
704 - Sandy COBBLES	
705 - Gravelly COBBLES	
706 - Organic COBBLES	
708 - Clayey sandy COBBLES	
709 - Clayey gravelly COBBLES	
713 - Silty sandy COBBLES	
714 - Silty gravelly COBBLES	
715 - Silty organic COBBLES	
716 - Silty gravelly sandy COBBLES	
717 - Silty sandy organic COBBLES	
718 - Silty sandy gravelly organic COBBLES	
719 - Sandy gravelly COBBLES	
720 - Sandy organic COBBLES	
721 - Gravelly organic COBBLES	
725 - COBBLES and BOULDERS	
730 - BOULDERS	
731 - Gravelly cobbly BOULDERS	
801 - MUDSTONE	
802 - SILTSTONE	
803 - SANDSTONE	
804 - LIMESTONE	
805 - CHALK	
806 - COAL	
807 - BRECCIA	
808 - CONGLOMERATE	
809 - Fine grained IGNEOUS	
810 - Medium grained IGNEOUS	
811 - Coarse grained IGNEOUS	
812 - Fine grained METAMORPHIC	
813 - Medium grained METAMORPHIC	
814 - Coarse grained METAMORPHIC	
997 - Undetermined	
998 - No Recovery	
999 - Void	

KEY TO EXPLORATORY HOLE RECORDS

Backfill / Installations

901 - Sand Backfill	
902 - Gravel Backfill	
903 - Bentonite	
904 - Grout	
905 - Arisings	
906 - Concrete	
907 - Asphalt	
909 - Upstand cover	
910 - Flush cover	
Plain Pipe	
Slotted Pipe	

BOREHOLE LOG

Borehole No: BH102
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384763.18 mE	Checked By:	JE
Project No:	331B-3a		399691.38 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.39 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	29/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	6.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Concrete (Driller's description).		(0.50)														
		0.50	38.89													
Bentonite (Driller's description).		(4.00)														
		4.50	34.89													
Pea gravel (Driller's description).		(2.00)														
		6.50	32.89													
Borehole Terminated at 6.50m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH102
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384763.18 mE	Checked By:	JE
Project No:	331B-3a		399691.38 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.39 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	29/04/2024	Orientation:	- - deg.		
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	6.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	6.50	CP	29/04/2024	29/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
29/04/2024	07:30	0.00	0.00	Dry	Start of shift
29/04/2024	18:00	6.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
6.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
6.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	6.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH102	Date:	2024-04-29

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384763.18	399691.375	MSL	39.39

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [x] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Dry

Start of shift	Time:	End of shift	Time:
2024-04-29	10:54	2024-04-29	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH102	SP - Standpipe Distance (m): 6.50	50	Top: 2.00 Base: 6.50	Base: 6.50 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
6.50

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	6.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 115 m3: 0.115	Volume used: Litres: 75 20kg bags: m3: 0.075 Comments (mix ratio / compaction type): 3:1 bentonite cement 6 bags

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

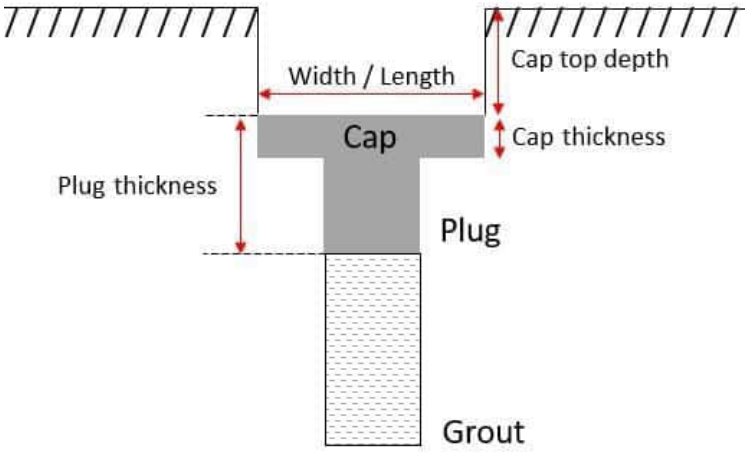
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted] 1:00

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH103
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384689.01 mE	Checked By:	JE
Project No:	331B-3a		399695.59 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	41.14 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	29/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	3.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing: Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units	TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
Bentonite (Driller's description).		(1.00)												▼		
		1.00	40.14													
Pea gravel (Driller's description).		(2.50)														
		3.50	37.64													
Borehole Terminated at 3.50m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH103
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384689.01 mE	Checked By:	JE
Project No:	331B-3a		399695.59 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	41.14 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	29/04/2024	Orientation:	- - deg.		
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	3.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	3.50	CP	29/04/2024	29/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
29/04/2024	07:30	0.00	0.00	Dry	Start of shift
29/04/2024	18:00	3.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
3.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
3.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	3.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH103	Date:	2024-04-29

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384689.014	399695.588	MSL	41.14

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [ ] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Dry

Start of shift	Time:	End of shift	Time:
2024-04-29	13:03	2024-04-29	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH103	SP - Standpipe Distance (m): 3.50	50	Top: 1.00 Base: 3.50	Base: 3.50 Water: 0.50 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
3.50

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	3.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 62 m3: 0.062	Volume used: Litres: 50 20kg bags: m3: 0.05 Comments (mix ratio / compaction type): 3:1 bentonite cement 4 bags

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

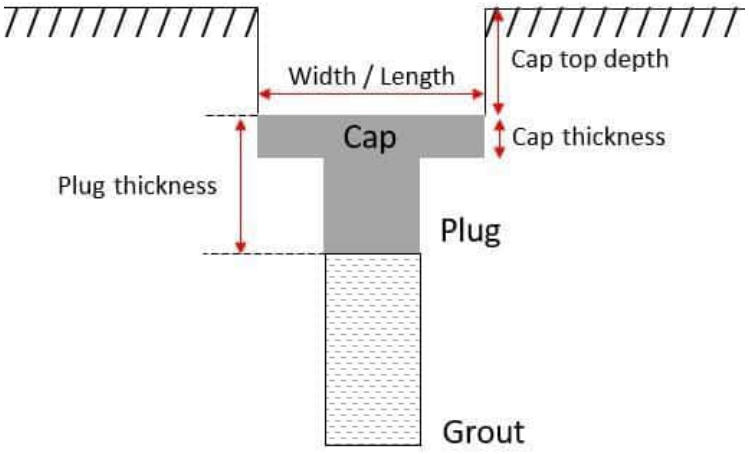
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted] 01:00

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH206
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384729.23 mE	Checked By:	JE
Project No:	331B-3a		399690.75 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	42.72 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	29/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	6.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)
Concrete (Driller's description).		(0.50)	
		0.50	42.22
Bentonite (Driller's description).		(1.50)	
		2.00	40.72
Pea gravel (Driller's description).		(4.00)	
		6.00	36.72
Borehole Terminated at 6.00m			

Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH206
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384729.23 mE	Checked By:	JE
Project No:	331B-3a		399690.75 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	42.72 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	29/04/2024	Orientation:	- - deg.		
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	6.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	6.00	CP	29/04/2024	29/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
29/04/2024	07:30	0.00	0.00	Dry	Start of shift
29/04/2024	18:00	6.00	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
6.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
6.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	6.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH206	Date:	2024-04-29

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384729.233	399690.75	MSL	42.72

Location Configuration

Site Type:
☑ Private ☐ Highway ☐ Railway ☐ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☐ Raised cover ☑ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☐ Yes ☐ No ☑ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Dry

Start of shift	Time:	End of shift	Time:
2024-04-29	11:47	2024-04-29	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH206	SP - Standpipe Distance (m): 6.00	50	Top: 2.00 Base: 6.00	Base: 6.00 Water: ☑ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
6.00

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	6.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 107 m3: 0.107	Volume used: Litres: 75 20kg bags: m3: 0.075 Comments (mix ratio / compaction type): 3:1 bentonite cement 6 bags

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

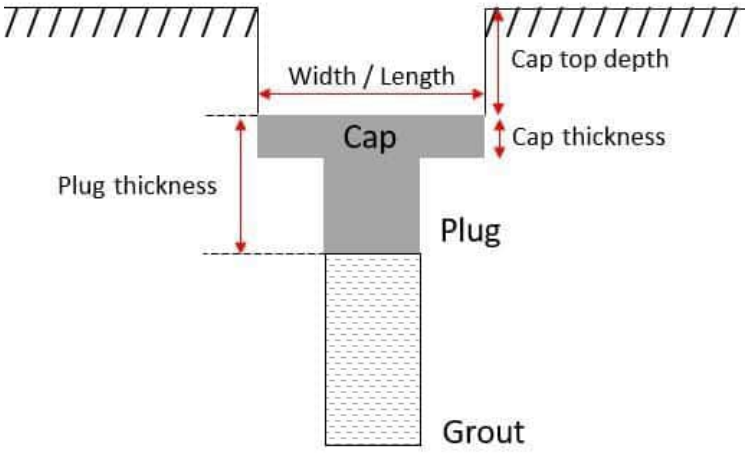
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]07 +01:00

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH207
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384654.25 mE	Checked By:	JE
Project No:	331B-3a		399626.10 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.43 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	29/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	15.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Bentonite (Driller's description).		(1.50)														
		1.50	38.93													
Pea gravel (Driller's description).		(14.00)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE LOG

Borehole No: BH207
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384654.25 mE	Checked By:	JE
Project No:	331B-3a		399626.10 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.43 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	29/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	15.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pea gravel (Driller's description).																
Borehole Terminated at 15.50m		15.50	24.93													

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH207
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384654.25 mE	Checked By:	JE
Project No:	331B-3a		399626.10 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.43 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	29/04/2024	Orientation:	- - deg.		
Date Completed:	29/04/2024	Inclination:	90 deg.	Final Depth:	15.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	15.50	CP	29/04/2024	29/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
29/04/2024	07:30	0.00	0.00	Dry	Start of shift
29/04/2024	18:00	15.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
15.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
15.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	15.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B
Location ID:	Bh207	Date:	2024-04-29

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384654.246	399626.100	MSL	40.43

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [ ] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Dry

Start of shift	Time:	End of shift	Time:
2024-04-29	14:09	2024-04-29	18:00

Pre-condition Photographs

#	Photograph
1	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

Construction

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH207	SP - Standpipe Distance (m): 15.50	50	Top: 1.50 Base: 15.50	Base: 15.50 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
15.50

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	15.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 274 m3: 0.274	Volume used: Litres: 200 20kg bags: m3: 0.2 Comments (mix ratio / compaction type): 3:1 bentonite cement 16 bags

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

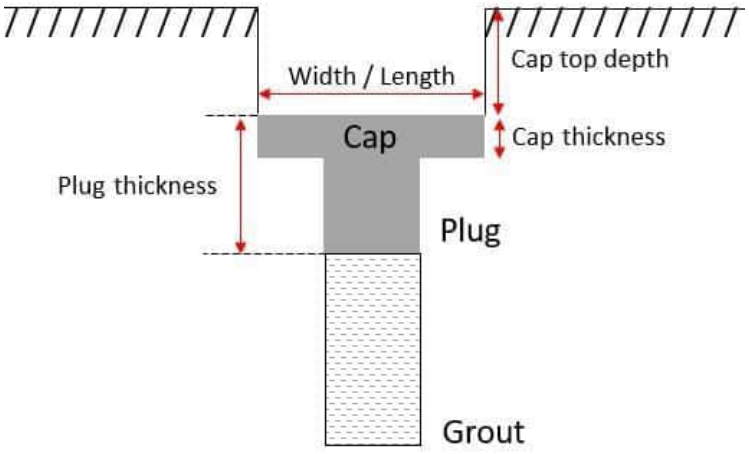
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH209
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384548.84 mE	Checked By:	JE
Project No:	331B-3a		399628.33 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.90 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	30/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	17.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Bentonite (Driller's description).		(11.00)												▼		

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE LOG

Borehole No: BH209
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384548.84 mE	Checked By:	JE
Project No:	331B-3a		399628.33 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.90 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	30/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	17.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Bentonite (Driller's description).		11.00	28.90													
Pea gravel (Driller's description).		(6.00)														
Borehole Terminated at 17.00m		17.00	22.90													

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH209
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384548.84 mE	Checked By:	JE
Project No:	331B-3a		399628.33 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.90 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	30/04/2024	Orientation:	- - deg.		
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	17.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	17.00	CP	30/04/2024	30/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
30/04/2024	07:30	0.00	0.00	Dry	Start of shift
30/04/2024	18:00	17.00	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
17.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
17.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	905	Arisings
0.50	17.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH209	Date:	2024-04-30

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384548.843	399628.33	MSL	39.90

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [ ] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Dry

Start of shift	Time:	End of shift	Time:
2024-04-30	07:30	2024-04-30	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH209	SP - Standpipe Distance (m): 17.00	50	Top: 11.00 Base: 17.00	Base: 17.00 Water: 4.00 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
17.00

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	905 - Arisings Method: ☐ Tremie pipe ☐ Poured	Litres: 9 m3: 0.009	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	17.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 292 m3: 0.292	Volume used: Litres: 225 20kg bags: m3: 0.225 Comments (mix ratio / compaction type): 18 bags 3:1 bentonite cement

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

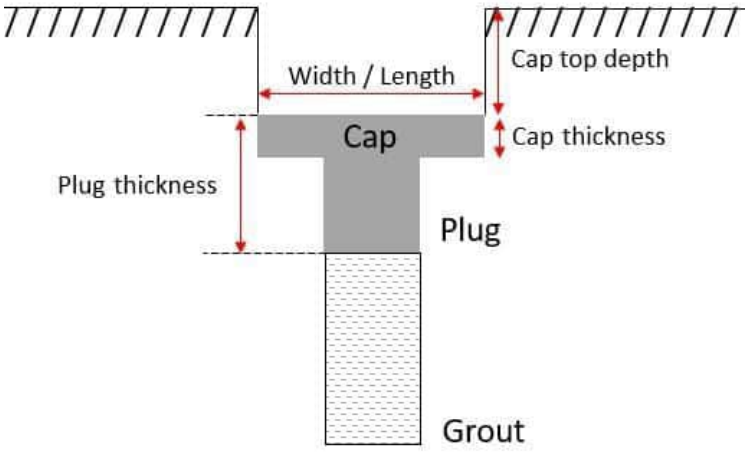
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]

Form revision: 1.0.0 (2024-04-10)

Exploratory Hole Log

Location ID: BH301
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384858.28 mE	Checked By:	SM
Project No:	331B-3a		399760.46 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	41.61 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	15.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe with bentonite (driller's description).		(15.00)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Hole Log

Location ID: BH301
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384858.28 mE	Checked By:	SM
Project No:	331B-3a		399760.46 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	41.61 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	15.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe with bentonite (driller's description).																
		15.00	26.61													
Terminated at 15.00m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Information Sheet

Location ID: BH301
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384858.28 mE	Checked By:	SM
Project No:	331B-3a		399760.46 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	41.61 mOD	Log Status:	FINAL
Engineer:	BAM Nuttall			Print Date:	25/06/2025
Date Started:	10/07/2024	Orientation:	- - deg.		
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	15.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	15.00	CP	10/07/2024	10/07/2024	T820-628			Richard McCormick / Lewis winder		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
10/07/2024	07:30	0.00	0.00	Dry	Start of shift
10/07/2024	18:00	0.00	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
15.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
15.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	15.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B
Location ID:	BH301	Date:	2024-07-10

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384858.280	399760.460		41.610

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [ ] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Cloudy

Start of shift	Time:	End of shift	Time:
2024-07-10	07:30	2024-07-10	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH301	ICE - Inclinometer Distance (m): 15.00	150	Top: Base:	Base: 15.00 Water: 11.00 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
15.00

Grout mixer used (Equipment Make/Model):
Pudzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	15.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 266 m3: 0.266	Volume used: Litres: 150 20kg bags: m3: 0.15 Comments (mix ratio / compaction type): 12 bags 3:1 bentonite cement

Cap Dimensions

Has a concrete cap been placed?
☑ Yes ☐ No

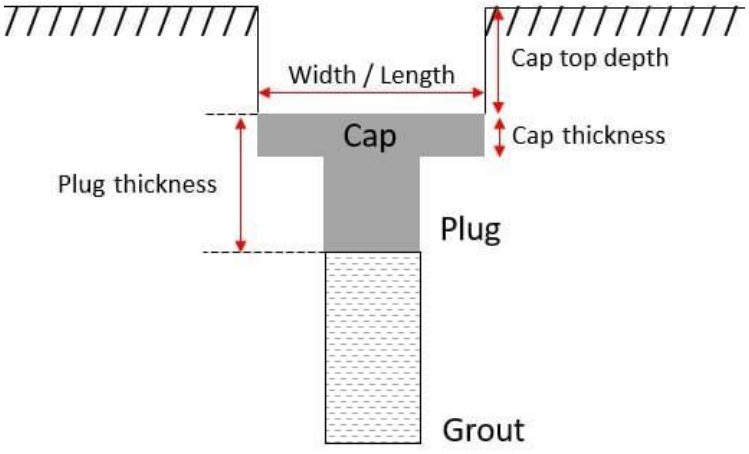
Cap Top Depth (m):
0.20

Cap Width (m):
0.50

Cap Length (m):
0.50

Cap Thickness (m):
0.50

Plug Thickness (m):
0.50



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted] 8:02 +01:00

Form revision: 1.0.0 (2024-04-10)

Exploratory Hole Log

Location ID: BH301C
Sheet 1 of 3

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384846.00 mE	Checked By:	SM
Project No:	331B-3a		399748.92 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.51 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	11/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	11/07/2024	Inclination:	90 deg.	Final Depth:	23.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Plastic pipe with bentonite. (Driller's description).		(17.00)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Hole Log

Location ID: BH301C
Sheet 2 of 3

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384846.00 mE	Checked By:	SM
Project No:	331B-3a		399748.92 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.51 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	11/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	11/07/2024	Inclination:	90 deg.	Final Depth:	23.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Plastic pipe with bentonite. (Driller's description).		17.00	23.51													
Plastic pipe with gravel. (Driller's description).		(6.00)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Hole Log

Location ID: BH301C
Sheet 3 of 3

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384846.00 mE	Checked By:	SM
Project No:	331B-3a		399748.92 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.51 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	11/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	11/07/2024	Inclination:	90 deg.	Final Depth:	23.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Plastic pipe with gravel. (Driller's description).																
		23.00	17.51													
Terminated at 23.00m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Information Sheet

Location ID: BH301C
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384846.00 mE	Checked By:	SM
Project No:	331B-3a		399748.92 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	40.51 mOD	Log Status:	FINAL
Engineer:	BAM Nuttall			Print Date:	25/06/2025
Date Started:	11/07/2024	Orientation:	- - deg.		
Date Completed:	11/07/2024	Inclination:	90 deg.	Final Depth:	23.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	23.00	CP	11/07/2024	11/07/2024	T820-628			Richard McCormick / Lewis winder		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
11/07/2024	07:30	0.00	0.00	Dry	Start of shift
11/07/2024	18:00	0.00	0.00		Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
23.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
23.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	23.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B
Location ID:	BH301C	Date:	2024-07-11

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384846.000	399748.920	OS Newlyn	40.510

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [ ] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Cloudy

Start of shift	Time:	End of shift	Time:
2024-07-11	10:02	2024-07-11	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH301c	SP - Standpipe Distance (m): 23.00	50	Top: 17.00 Base: 23.00	Base: 23.00 Water: 17.00 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
23.00

Grout mixer used (Equipment Make/Model):
Pudzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	23.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 407 m3: 0.407	Volume used: Litres: 250 20kg bags: m3: 0.25 Comments (mix ratio / compaction type): 20 bags 3:1bentonite cement

Cap Dimensions

Has a concrete cap been placed?
☑ Yes ☐ No

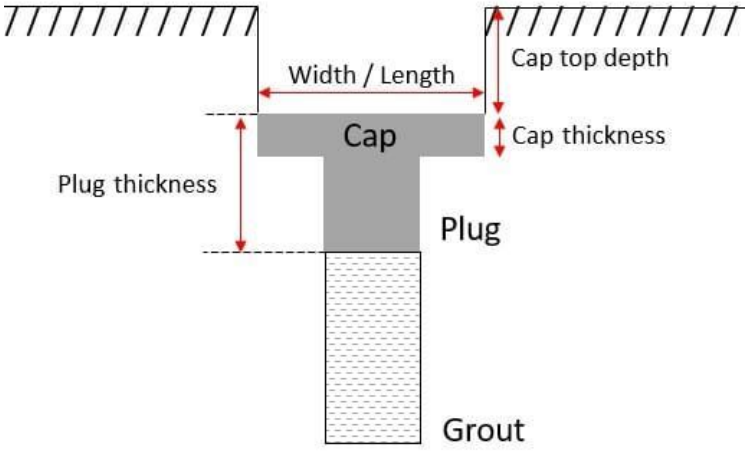
Cap Top Depth (m):
0.20

Cap Width (m):
0.50

Cap Length (m):
0.50

Cap Thickness (m):
0.50

Plug Thickness (m):
0.50



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]:00

Form revision: 1.0.0 (2024-04-10)

Exploratory Hole Log

Location ID: BH302
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384826.88 mE	Checked By:	SM
Project No:	331B-3a		399705.57 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	42.77 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	11.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe and bentonite. (Driller's description).		(11.00)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Hole Log

Location ID: BH302
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384826.88 mE	Checked By:	SM
Project No:	331B-3a		399705.57 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	42.77 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	11.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe and bentonite. (Driller's description).																
		11.00	31.77													
Terminated at 11.00m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Information Sheet

Location ID: BH302
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384826.88 mE	Checked By:	SM
Project No:	331B-3a		399705.57 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	42.77 mOD	Log Status:	FINAL
Engineer:	BAM Nuttall			Print Date:	25/06/2025
Date Started:	10/07/2024	Orientation:	- - deg.		
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	11.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	11.00	CP	10/07/2024	10/07/2024	T820-628			Richard McCormick / Lewis winder		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
10/07/2024	07:30	0.00	0.00	Dry	Start of shift
10/07/2024	18:00	0.00	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
11.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
11.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	11.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B
Location ID:	BH302	Date:	2024-07-10

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384826.880	399705.570		42.770

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [x] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [x] Yes
- [ ] No
- [ ] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Cloudy

Start of shift	Time:	End of shift	Time:
2024-07-10	10:44	2024-07-10	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH302	ICE - Inclinometer Distance (m): 14.00	50	Top: Base:	Base: 14.00 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
14.00

Grout mixer used (Equipment Make/Model):
Pudzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	14.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 248 m3: 0.248	Volume used: Litres: 175 20kg bags: m3: 0.175 Comments (mix ratio / compaction type): 14 bags 3:1 bentonite cement

Cap Dimensions

Has a concrete cap been placed?
☑ Yes ☐ No

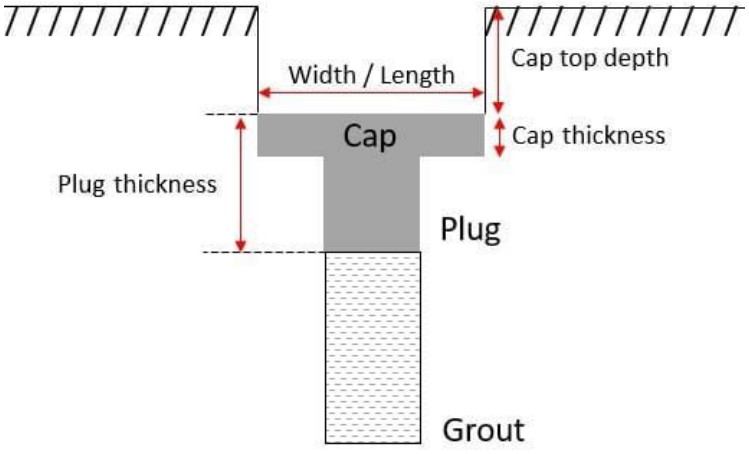
Cap Top Depth (m):
0.20

Cap Width (m):
0.50

Cap Length (m):
0.50

Cap Thickness (m):
0.50

Plug Thickness (m):
0.50



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]

Form revision: 1.0.0 (2024-04-10)

Exploratory Hole Log

Location ID: BH303
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384417.22 mE	Checked By:	SM
Project No:	331B-3a		399555.76 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	45.22 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	11.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe with bentonite. (Driller's description).		(8.50)														
Pipe with gravel. (Driller's description).		8.50	36.72													
		(2.50)														

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Hole Log

Location ID: BH303
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384417.22 mE	Checked By:	SM
Project No:	331B-3a		399555.76 mN	Approved By:	BS
Client:	Homes England Housing Infrastructure Fund	Ground Level:	45.22 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	FINAL
Date Started:	10/07/2024	Orientation:	- - deg.	Print Date:	25/06/2025
Date Completed:	10/07/2024	Inclination:	90 deg.	Final Depth:	11.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pipe with gravel. (Driller's description).		11.00	34.22													
Terminated at 11.00m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Exploratory Information Sheet'.

Remarks

Exploratory Information Sheet

Location ID: BH303
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB
		Co-ordinates:	384417.22 mE
Project No:	331B-3a		399555.76 mN
Client:	Homes England Housing Infrastructure Fund	Ground Level:	45.22 mOD
Engineer:	BAM Nuttall		
Date Started:	10/07/2024	Orientation:	- - deg.
Date Completed:	10/07/2024	Inclination:	90 deg.

Hole Type:	CP
Checked By:	SM
Approved By:	BS
Log Status:	FINAL
Print Date:	25/06/2025
Final Depth:	11.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	11.00	CP	10/07/2024	10/07/2024	T820-628			Richard McCormick / Lewis winder		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
10/07/2024	07:30	0.00	0.00	Dry	Start of shift
10/07/2024	18:00	11.00	11.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
111.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
11.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	11.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B
Location ID:	BH303	Date:	2024-07-10

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384417.230	399555.760	OS Newlyn	45.220

Location Configuration

Site Type:
☑ Private ☐ Highway ☐ Railway ☐ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☑ Raised cover ☐ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☑ Yes ☐ No ☐ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Cloudy

Start of shift	Time:	End of shift	Time:
2024-07-10	07:30	2024-07-10	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH303	SP - Standpipe Distance (m): 11.00	50	Top: 8.50 Base: 11.00	Base: 11.00 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
11.00

Grout mixer used (Equipment Make/Model):
Pudzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	11.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 195 m3: 0.195	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type): 10 bags 3:1 bentonite cement 125 litres waterr

Cap Dimensions

Has a concrete cap been placed?
☑ Yes ☐ No

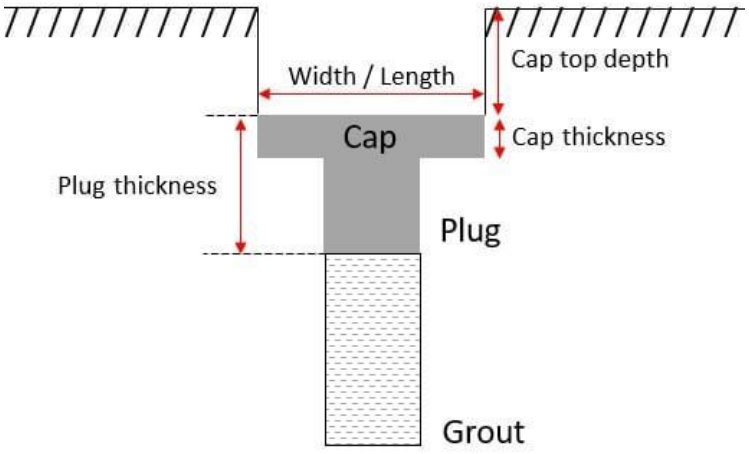
Cap Top Depth (m):
0.20

Cap Width (m):
0.50

Cap Length (m):
0.50

Cap Thickness (m):
0.50

Plug Thickness (m):
0.50



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]+01:00

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH306
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384520.14 mE	Checked By:	JE
Project No:	331B-3a		399490.63 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	31.45 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	30/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	5.60m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing: Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units	TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
Concrete		(0.50)														
		0.50	30.95													
Bentonite (Driller's description).		(3.40)														
		3.90	27.55													
Pea gravel (Driller's description).		(1.70)														
		5.60	25.85													
Borehole Terminated at 5.60m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH306
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384520.14 mE	Checked By:	JE
Project No:	331B-3a		399490.63 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	31.45 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	30/04/2024	Orientation:	- - deg.		
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	5.60m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	5.60	CP	30/04/2024	30/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
30/04/2024	07:30	0.00	0.00	Dry	Start of shift
30/04/2024	18:00	5.60	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
5.60	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
5.60	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	5.60	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH306	Date:	2024-04-30

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384520.1423	399490.6272	MSL	31.45

Location Configuration

Site Type:
☑ Private ☐ Highway ☐ Railway ☐ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☐ Raised cover ☑ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☐ Yes ☐ No ☑ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Dry

Start of shift	Time:	End of shift	Time:
2024-04-30	09:23	2024-04-30	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH306	SP - Standpipe Distance (m): 5.60	50	Top: 2.90 Base: 5.60	Base: 5.60 Water: ☑ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
5.60

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	5.60	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 99 m3: 0.099	Volume used: Litres: 75 20kg bags: m3: 0.075 Comments (mix ratio / compaction type): 6bags 3:1 bentonite cement

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

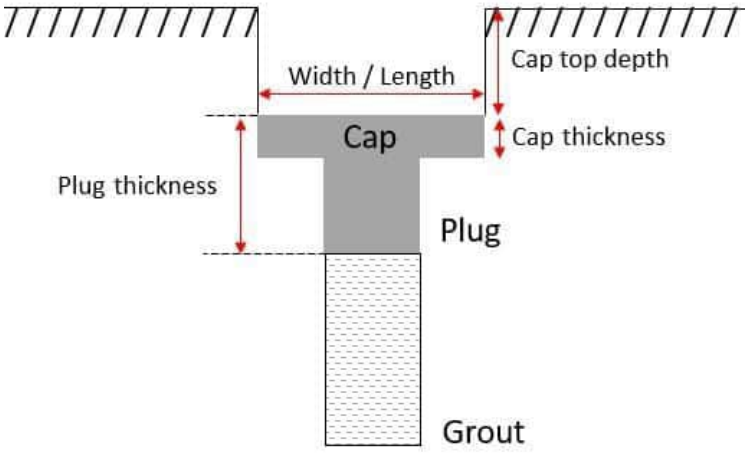
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH309
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384863.87 mE	Checked By:	JE
Project No:	331B-3a		399641.32 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	30.50 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	02/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	02/05/2024	Inclination:	90 deg.	Final Depth:	11.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing: Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units	TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
Concrete (Driller's description).		(0.50)														
		0.50	30.00													
Bentonite (Driller's description).		(6.50)												▼		
		7.00	23.50													
Pea gravel (Driller's description).		(4.50)														

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE LOG

Borehole No: BH309
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384863.87 mE	Checked By:	JE
Project No:	331B-3a		399641.32 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	30.50 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	02/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	02/05/2024	Inclination:	90 deg.	Final Depth:	11.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pea gravel (Driller's description).		11.50	19.00													
Borehole Terminated at 11.50m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH309
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384863.87 mE	Checked By:	JE
Project No:	331B-3a		399641.32 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	30.50 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	02/05/2024	Orientation:	- - deg.		
Date Completed:	02/05/2024	Inclination:	90 deg.	Final Depth:	11.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	11.50	CP	02/05/2024	02/05/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
02/05/2024	07:30	0.00	0.00	5.30	Start of shift
02/05/2024	11:50	11.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
11.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
11.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	906	Concrete
0.50	11.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH309	Date:	2024-05-02

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384863.8658	399641.3198	MSL	30.50

Location Configuration

Site Type:
☐ Private ☑ Highway ☐ Railway ☐ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☐ Raised cover ☑ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☑ Yes ☐ No ☐ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Overcast

Start of shift	Time:	End of shift	Time:
2024-05-02	08:00	2024-05-02	10:30

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

#	Photograph
4	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH309	SP - Standpipe Distance (m): 11.50	50	Top: 7.00 Base: 11.50	Base: 11.50 Water: 5.30 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	906 - Concrete Method: ☐ Tremie pipe ☐ Poured	Litres: 9 m3: 0.009	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	11.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 195 m3: 0.195	Volume used: Litres: 200 20kg bags: m3: 0.2 Comments (mix ratio / compaction type):

Cap Dimensions

Has a concrete cap been placed?
☑ Yes ☐ No

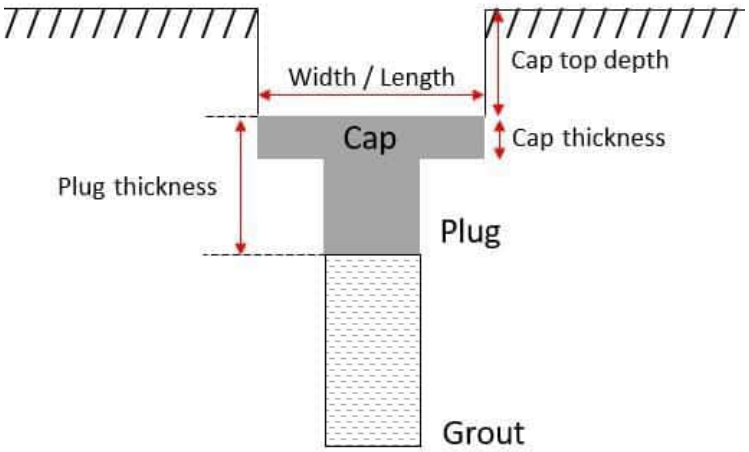
Cap Top Depth (m):
0.00

Cap Width (m):
0.30

Cap Length (m):
0.30

Cap Thickness (m):
0.10

Plug Thickness (m):
0.40



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

#	Photograph
4	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Chris Hewitt

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH310
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384838.09 mE	Checked By:	JE
Project No:	331B-3a		399638.18 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	32.60 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	01/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	16.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Concrete (Driller's description).		(0.50)														
		0.50	32.10													
Bentonite (Driller's description).		(7.50)														
		8.00	24.60													
Pea gravel (Driller's description).														▼		

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE LOG

Borehole No: BH310
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384838.09 mE	Checked By:	JE
Project No:	331B-3a		399638.18 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	32.60 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	01/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	16.00m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pea gravel (Driller's description).		(8.00)														
Borehole Terminated at 16.00m		16.00	16.60													

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH310
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384838.09 mE	Checked By:	JE
Project No:	331B-3a		399638.18 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	32.60 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	01/05/2024	Orientation:	- - deg.		
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	16.00m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	16.00	CP	01/05/2024	01/05/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
01/05/2024	10:30	0.00	0.00	8.50	Start of shift
01/05/2024	15:00	16.00	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
16.00	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
16.00	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	905	Arisings
0.50	16.00	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH310	Date:	2024-05-01

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384838.086	399638.176	MSL	32.60

Location Configuration

Site Type:
☐ Private ☐ Highway ☐ Railway ☑ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☐ Raised cover ☑ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☑ Yes ☐ No ☐ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Sunny

Start of shift	Time:	End of shift	Time:
2024-05-01	10:30	2024-05-01	15:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH310	SP - Standpipe Distance (m): 16.00	50	Top: 8.00 Base: 16.00	Base: 15.70 Water: 8.50 ☐ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	905 - Arisings Method: ☐ Tremie pipe ☑ Poured	Litres: 9 m3: 0.009	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	16.00	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 274 m3: 0.274	Volume used: Litres: 200 20kg bags: m3: 0.2 Comments (mix ratio / compaction type):

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

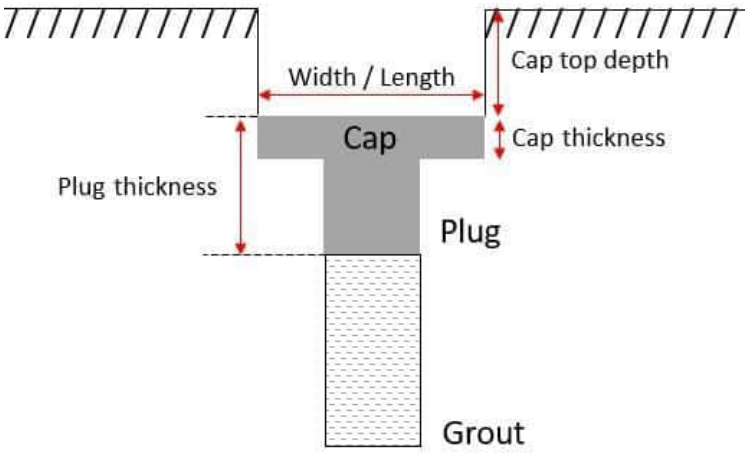
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Chris Hewitt

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH315
Sheet 1 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384889.76 mE	Checked By:	JE
Project No:	331B-3a		399761.36 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.26 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	30/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	12.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Concrete (Driller's description).		(0.50)														
		0.50	38.76													
Bentonite (Driller's description).		(8.50)														
		9.00	30.26													
Pea gravel (Driller's description).																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE LOG

Borehole No: BH315
Sheet 2 of 2

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384889.76 mE	Checked By:	JE
Project No:	331B-3a		399761.36 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.26 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	30/04/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	12.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Pea gravel (Driller's description).		(3.50)														
Borehole Terminated at 12.50m		12.50	26.76													

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH315
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384889.76 mE	Checked By:	JE
Project No:	331B-3a		399761.36 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	39.26 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	30/04/2024	Orientation:	- - deg.		
Date Completed:	30/04/2024	Inclination:	90 deg.	Final Depth:	12.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	12.50	CP	30/04/2024	30/04/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
30/04/2024	07:30	0.00	0.00	Dry	Start of shift
30/04/2024	18:00	12.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
12.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
12.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	905	Arisings
0.50	12.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH315	Date:	2024-04-30

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384889.7636	399761.3557	MSL	39.26

Location Configuration

Site Type:
- [x] Private
- [ ] Highway
- [ ] Railway
- [ ] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [x] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [ ] Yes
- [ ] No
- [x] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Dry

Start of shift	Time:	End of shift	Time:
2024-04-30	08:28	2024-04-30	18:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

150

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH315	SP - Standpipe Distance (m): 12.50	50	Top: 9.00 Base: 12.50	Base: 12.50 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
12.50

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	905 - Arisings Method: ☐ Tremie pipe ☐ Poured	Litres: 9 m3: 0.009	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	12.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 213 m3: 0.213	Volume used: Litres: 125 20kg bags: m3: 0.125 Comments (mix ratio / compaction type): Bentonite cement 3:1 10 bags

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

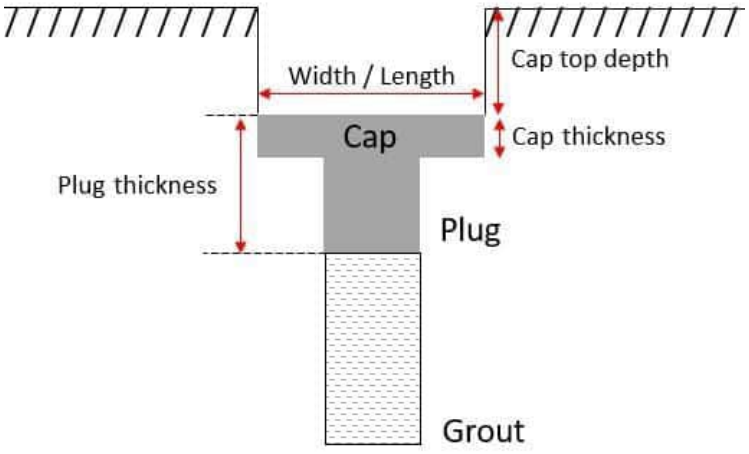
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Richard McCormick

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH321
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384770.34 mE	Checked By:	JE
Project No:	331B-3a		399639.02 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	34.20 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	01/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	4.50m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Concrete (Driller's description).		0.20	34.00													
Bentonite (Driller's description).		(0.30)														
		0.50	33.70													
Pea gravel (Driller's description).		(4.00)														
		4.50	29.70													
Borehole Terminated at 4.50m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH321
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384770.34 mE	Checked By:	JE
Project No:	331B-3a		399639.02 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	34.20 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	01/05/2024	Orientation:	- - deg.		
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	4.50m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	4.50	CP	01/05/2024	01/05/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
01/05/2024	08:00	0.00	0.00	Dry	Start of shift
01/05/2024	10:30	4.50	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
4.50	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
4.50	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	905	Arisings
0.50	4.50	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH321	Date:	2024-05-01

Location

Type of Locating equipment:
☑ dGPS ☐ GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384770.335	399639.0228	MSL	34.20

Location Configuration

Site Type:
☐ Private ☐ Highway ☐ Railway ☑ Soft landscape ☐ Arable Field ☐ Grazing Field

Existing Features:
☐ Protective fence ☐ Raised cover ☑ Flush cover ☐ Instrumentation ☐ Other

Other (please specify:)

Has additional features been removed by decommissioning?
☑ Yes ☐ No ☐ N/A

Can decommissioning work be completed?
☑ Yes ☐ No

General Details

Weather
Sunny

Start of shift	Time:	End of shift	Time:
2024-05-01	08:00	2024-05-01	10:30

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

#	Photograph
4	

Over-drill Log

Has the location been over-drilled?

■ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

50

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH321	SP - Standpipe Distance (m): 4.50	50	Top: 0.50 Base: 4.50	Base: 4.30 Water: ■ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
4.50

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	905 - Arisings Method: ☐ Tremie pipe ☐ Poured	Litres: 1 m3: 0.001	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	4.50	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 8 m3: 0.008	Volume used: Litres: 50 20kg bags: m3: 0.05 Comments (mix ratio / compaction type):

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

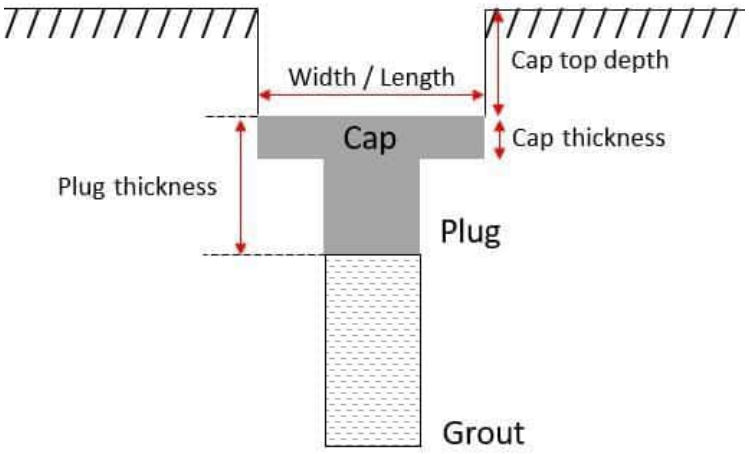
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

#	Photograph
4	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Chris Hewitt

[redacted]

Form revision: 1.0.0 (2024-04-10)

BOREHOLE LOG

Borehole No: BH322
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384715.20 mE	Checked By:	JE
Project No:	331B-3a		399587.28 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	32.49 mOD	Scale:	1:50
Engineer:	BAM Nuttall			Log Status:	DRAFT
Date Started:	01/05/2024	Orientation:	- - deg.	Print Date:	03/06/2024
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	5.80m

Stratum Description	Leg.	Depth (Thick-ness) (m)	Level (m)	Sampling, Coring and In Situ Testing								TCR SCR RQD %	IFmin mm IFave mm IFmax mm or [FI]	Water	Well/ Backfill	D
				Depth (m)	Type	Dia (mm)	Rec %	Blows/ [mins]	Test	Test Result	Units					
Concrete (Driller's description).		(0.50)														
		0.50	31.99													
Bentonite (Driller's description).		(4.90)														
		5.40	27.09													
Pea gravel (Driller's description).		(0.40)														
		5.80	26.69													
Borehole Terminated at 5.80m																

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.
Please note that this log is still draft and may be subject to change.

Remarks

BOREHOLE INFORMATION SHEET

Borehole No
BH322
Sheet 1 of 1

Project Name:	Victoria North HiF Decommissioning	Survey Grid System:	OSGB	Hole Type:	CP
		Co-ordinates:	384715.20 mE	Checked By:	JE
Project No:	331B-3a		399587.28 mN	Approved By:	JH
Client:	Homes England Housing Infrastructure Fund	Ground Level:	32.49 mOD	Log Status:	DRAFT
Engineer:	BAM Nuttall			Print Date:	03/06/2024
Date Started:	01/05/2024	Orientation:	- - deg.		
Date Completed:	01/05/2024	Inclination:	90 deg.	Final Depth:	5.80m

Depth Related Exploratory Hole Information

From (m)	To (m)	Type	Start	End	Plant	Barrel	Drill Bit	Rig Crew	Logger	Remarks
0.00	5.80	CP	01/05/2024	01/05/2024	Dando 3000 T820-634			CH		

Boring-Drilling Progress

Date	Time	Depth (m)	Casing (m)	Depth Water (m)	Remarks
01/05/2024	15:00	0.00	0.00	Dry	Start of shift
01/05/2024	17:00	5.80	0.00	Dry	Hole complete

Hole Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
5.80	150	

Casing Diameter by Depth

Depth (m)	Dia. (mm)	Remarks
5.80	150	

Water Added Records

From (m)	To (m)	Volume (litres)	Remarks

Depth Related Remarks

From (m)	To (m)	Remarks

Chiselling / Hard Boring Details

From (m)	To (m)	Duration (hh:mm)	Tool

Drilling Flush Details

From (m)	To (m)	Returns (%)	Flush	Colour

Water Strikes

Date	Strike (m)	Casing (m)	Time (mins)	Depth (m)	Sealed (m)	Remarks

Monitoring Installation Pipe Work

Type	Pipe ID	From (m)	To (m)	Dia(mm)	Pipe Type	Remarks

Backfill Details

From (m)	To (m)	Legend	Description
0.00	0.50	905	Arisings
0.50	5.80	904	Grout

Standard Penetration Test Results

Depth (m)	Type	N Value	Casing (m)	Water (m)	SWPen(mm)	Blows1	Pen1(mm)	Blows2	Pen2(mm)	Blows3	Pen3(mm)	Blows4	Pen4(mm)	Blows5	Pen5(mm)	Blows6	Pen6(mm)	Hammer	E. Ratio%

Reason for Hole Termination: Decommissioning complete

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Please note that this log is still draft and may be subject to change.

BR-SR13 - Borehole Decommissioning Record

Contract Name:	Victoria North	Contract No:	RGN.331B-3a
Location ID:	BH322	Date:	2024-05-01

Location

Type of Locating equipment:
- [x] dGPS
- [ ] GPS

Grid Reference System:	Easting:	Northing:	Datum:	Elevation (m):
OSGB	384715.203	399587.279	MSL	32.49

Location Configuration

Site Type:
- [ ] Private
- [ ] Highway
- [ ] Railway
- [x] Soft landscape
- [ ] Arable Field
- [ ] Grazing Field

Existing Features:
- [ ] Protective fence
- [ ] Raised cover
- [x] Flush cover
- [ ] Instrumentation
- [ ] Other

Other (please specify:)

Has additional features been removed by decommissioning?
- [x] Yes
- [ ] No
- [ ] N/A

Can decommissioning work be completed?
- [x] Yes
- [ ] No

General Details

Weather: Sunny

Start of shift	Time:	End of shift	Time:
2024-05-01	15:00	2024-05-01	17:00

Pre-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

Over-drill Log

Has the location been over-drilled?

☑ Yes ☐ No

A drillers log (BR-SR1) must also be completed for over-drilled locations.

Borehole and Installation Details

Reason for abandonment:

End of monitoring

Borehole Diameter (mm)

115

Installations

ID	Type	Diameter (mm)	Response Zone (mbgl)	Dip (mbgl)
BH322	SP - Standpipe Distance (m): 5.80	50	Top: 5.40 Base: 5.80	Base: 5.80 Water: ☑ or Dry

Decomissioning Details:

Decommissioning well type (EA,2012):
C - Low Permeability Backfill

Has pipework been removed:
☑ Yes ☐ No ☐ N/A

Depth pipe cut off (mbgl):
5.80

Grout mixer used (Equipment Make/Model):
Putzmeister

Backfill Rows

Top (mbgl):	Base (mbgl):	Type	Estimated Volume	Details
0.00	0.50	905 - Arisings Method: ☐ Tremie pipe ☑ Poured	Litres: 6 m3: 0.006	Volume used: Litres: 20kg bags: m3: Comments (mix ratio / compaction type):
0.50	5.80	904 - Grout Method: ☑ Tremie pipe ☐ Poured	Litres: 56 m3: 0.056	Volume used: Litres: 75 20kg bags: m3: 0.075 Comments (mix ratio / compaction type):

Cap Dimensions

Has a concrete cap been placed?
☐ Yes ☑ No

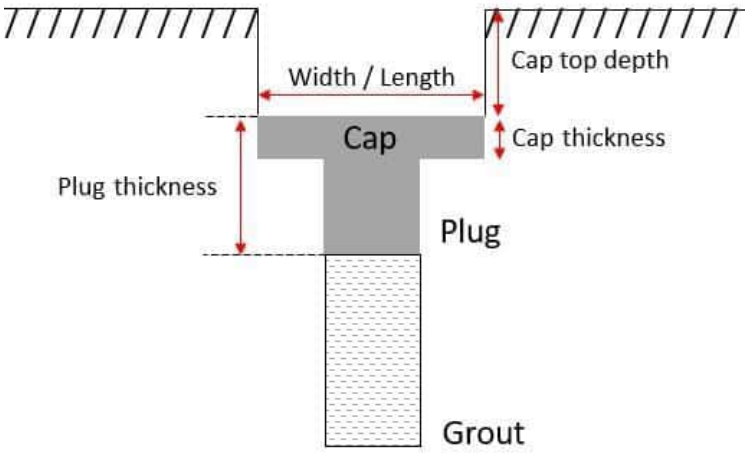
Cap Top Depth (m):

Cap Width (m):

Cap Length (m):

Cap Thickness (m):

Plug Thickness (m):



Post-condition Photographs

#	Photograph
1	

#	Photograph
2	

#	Photograph
3	

#	Photograph
4	

Sketch

Include sketch (if applicable):

Operative Details

Is decommissioning works complete?

☑ Yes ☐ No

Additional Remarks

Office: GI Warrington

Form completed by: Chris Hewitt

[redacted]

Form revision: 1.0.0 (2024-04-10)

C.3 Permitting

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

TEMPORARY WASTEWATER AGREEMENT BETWEEN

UNITED UTILITIES WATER LIMITED

And

BAM Nuttall Limited

This temporary Agreement is for 2 years or less

Start date **5th day of June** of **2023**

Expiry date **4th day June** of **2025**

Any discharge must only commence from the start date stated above and must terminate after the expiry date stated above. Any discharges undertaken outside the specified dates will be considered illegal. Any subsequent discharge will require a new application.

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

TEMPORARY AGREEMENT BETWEEN:

UNITED UTILITIES WATER LIMITED a company incorporated under the laws of England & Wales (company number 2366678) whose registered office is at Haweswater House, Lingley Mere Business Park, Lingley Green Avenue, Great Sankey, Warrington WA5 3LP ("**the Company")**

AND

BAM Nuttall Limited whose registered office is at **St James House, Knowl Road, Camberley, Surrey GU15 3XW (" the Applicant")**

(each a "Party" and together "the Parties")

WHEREAS:

The Company is the sewerage undertaker for the North West region of the United Kingdom appointed under the Water Industry Act 1991.

The Applicant is involved with the **construction / civil engineering projects** whose premise address is **Victoria North project, Collyhurst Road, Manchester M40 7RT**

The Applicant has applied to the Company for an agreement to discharge wastewater from the said premises into the sewers through details completed in your application form which was duly made on **28.09.22 (original application)**

The discharge of wastewater shall be in accordance with the said application form and would not be lawful without the permission of the Company.

The Parties are entering into this Agreement to set out the terms and conditions on which the Company agree to the discharge of wastewater by the Applicant from the said premises into its sewer.

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

NOW IT IS HEREBY AGREED as follows:

The Company HEREBY agree to the discharge of wastewater detailed in the application form submitted to the retailer **09.09.22** from the said premises into their sewers. This agreement shall be as if the discharge was trade effluent as defined in the Water Industry Act 1991 and shall be SUBJECT TO THE FOLLOWING CONDITIONS:

Nature of discharge	1.	Subject to the provisions of conditions below the nature or composition of the wastewater to be discharged under this agreement shall be solely as specified in the said Application form and shall consist solely of wastewater derived from **Contaminated groundwater**
Sewer affected	2.	The sewer into which the wastewater may be discharged and the point of discharge is the public foul sewer situate at **Between MH 6601 And MH 6501**
Connections	3.	No connections shall be made to the said sewer without the prior approval of the Company and all such connections shall be constructed and maintained to the satisfaction of the Company at the expense of the Applicant.
Maximum volume of discharge	4.	The maximum amount of the wastewater discharged in any one day of twenty four hours shall not exceed **260** m^3 without prior written consent of the company**.**
Maximum rate of discharge	5.	The highest rate at which the wastewater may be discharged shall not exceed **3** litre/sec
Matters to be eliminated prior to discharge to sewers	6.	The following matters shall be eliminated from the wastewater before it is discharged into the sewers of the Company: a) petroleum spirit; b) calcium carbide; c) carbon disulphide; d) except as provided in paragraph 7 hereof, the prescribed substances listed in Schedule 1 to The Trade Effluents (Prescribed Processes and

Substances) Regulations 1989, as amended from time to time, insofar as they are in concentration greater than the background concentration (as defined in the said Regulations);

e) where the wastewater derives from a prescribed process mentioned in Schedule 2 to the said Regulations, and except as provided in paragraph 7 hereof, asbestos (as defined in the said Regulations) and chloroform in a concentration greater than the background concentration (as defined in the said Regulations);

f) organo-halogen compounds including pesticide residues and degreasing agents;

g) any substances which either alone or in combination with each other or with any other matter lawfully present in the said sewers would be likely to;

i cause a nuisance or produce flammable, harmful or toxic vapours either in the sewers or at the sewage works of the Company;

ii injure the sewers or interfere with the free flow of their contents or affect prejudicially the treatment and disposal of their contents or have injurious effects on the sewage treatment works to which it is conveyed or upon any treatment plant there;

iii be dangerous to or cause injury to any person working in the sewers or at the sewage treatment works;

iv affect prejudicially any watercourse, estuary or coastal water into which the treated wastewater will eventually be discharged.

Matters to be limited prior to discharge to the sewer

7. The wastewater shall not contain

a) sulphides, hydrosulphides, polysulphides and substances producing hydrogen sulphide on acidification in excess of **1** mg/l

b) cyanides and cyanogen compounds which produce hydrogen cyanide on acidification in excess of **1** mg/l

c) sulphates as SO_4 in excess of **1000** mg/l.

d) Total suspended solids at pH 7.0 and dried at 110°C in excess of **400** mg/l

e) Settled chemical oxygen demand in excess of **1,000 mg/l**

f) Toxic metals in excess of **10,000** ug/l either individually or in total i.e. Antimony, Beryllium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Tin, Vanadium, Zinc;

g) Separable grease and oil in excess of **100** mg/l

h) Chloroform and its compounds in excess of **100** ug/l

i) Arsenic and its compounds in excess of **50** ug/l

j) Methane in excess of **0.14** mg/l

k) Total Nitrogen (including ammonia) in excess of **250** mg/l

l) Iron and its compounds in excess of **100,000** ug/l

Sampling and flow measurement

8. a) A flow metering device is to be installed at the discharge point and is to be maintained by the applicant to the satisfaction of the Company, or another means of assessing the volume of wastewater discharged is to be agreed in writing.

b) (i) A sampling point is to be provided so as to enable an authorised member of the Company's staff safely to obtain a sample of effluent passing to sewer. Such authorised members of staff shall be given free and ready access to the sampling point at all times.

(ii) Representative samples of the wastewater may be obtained from **the settlement / methane removal treatment tank outfall point**

c) The Trade Effluent department should be notified of all various discharges during the commissioning phase in order that adequate samples can be taken to monitor the discharge.

pH value

9. No wastewater shall be discharged having a pH of less than 6 or greater than 10.

Temperature

10. No wastewater shall be discharged which has a temperature higher than 43.3°C (110°F)

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

Cessation of Discharge	11.	In order to protect the sewer network and treatment processes it is essential that, should it be deemed necessary, the discharge to sewer will be terminated immediately on verbal instruction to your staff from the trade Effluent department.
Breach of Agreement	12.	If any wastewater is discharged to the sewer in excess or in breach of the conditions of this agreement a) The discharger shall notify the company on becoming aware of such a breach and shall immediately cease the discharge b) If the company detects such a breach they shall notify the discharger and if required by the company the discharger shall immediately cease the discharge.
Disputes	13.	a) The Parties shall attempt to resolve all disputes and differences between themselves but if any dispute remains unresolved for more than 30 calendar days after it first arose it shall be referred to the Parties' Senior Management for resolution. b) If the parties are unable to reach a resolution between them or through senior management then any dispute arising out of or in connection with this agreement shall be determined by a single arbitrator to be agreed between the parties.

Signed [redacted] Date _____

Print Name _____

For and on behalf of **BAM Nuttall Limited**

Signed _____ Date _____

Print Name _____

For and on behalf of United Utilities Water Limited

Temporary Agreement

Reference TWBAM05226323 – 2nd revision

WwTW Davyhulme

TEMPORARY WASTEWATER AGREEMENT BETWEEN

UNITED UTILITIES WATER LIMITED

And

BAM Nuttall Limited

This temporary Agreement is for 2 years or less

Start date **5th day of June** of **2025**

Expiry date **4th day June** of **2027**

Any discharge must only commence from the start date stated above and must terminate after the expiry date stated above. Any discharges undertaken outside the specified dates will be considered illegal. Any subsequent discharge will require a new application.

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

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The Applicant is involved with the **construction / civil engineering projects** whose premise address is **Victoria North project, Collyhurst Road, Manchester M40 7RT**

The Applicant has applied to the Company for an agreement to discharge wastewater from the said premises into the sewers through details completed in your application form which was duly made on **28.09.22 (original application)**

The discharge of wastewater shall be in accordance with the said application form and would not be lawful without the permission of the Company.

The Parties are entering into this Agreement to set out the terms and conditions on which the Company agree to the discharge of wastewater by the Applicant from the said premises into its sewer.

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

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Nature of discharge

1. Subject to the provisions of conditions below the nature or composition of the wastewater to be discharged under this agreement shall be solely as specified in the said Application form and shall consist solely of wastewater derived from

   Contaminated groundwater

Sewer affected

2. The sewer into which the wastewater may be discharged and the point of discharge is the public foul sewer situate at

   Between MH 6601 And MH 6501

Connections

3. No connections shall be made to the said sewer without the prior approval of the Company and all such connections shall be constructed and maintained to the satisfaction of the Company at the expense of the Applicant.

Maximum volume of discharge

4. The maximum amount of the wastewater discharged in any one day of twenty four hours shall not exceed **260** m^3 without prior written consent of the company**.**

Maximum rate of discharge

5. The highest rate at which the wastewater may be discharged shall not exceed **3** litre/sec

Matters to be eliminated prior to discharge to sewers

6. The following matters shall be eliminated from the wastewater before it is discharged into the sewers of the Company:

   a) petroleum spirit;

   b) calcium carbide;

   c) carbon disulphide;

   d) except as provided in paragraph 7 hereof, the prescribed substances listed in Schedule 1 to The Trade Effluents (Prescribed Processes and

Substances) Regulations 1989, as amended from time to time, insofar as they are in concentration greater than the background concentration (as defined in the said Regulations);

e) where the wastewater derives from a prescribed process mentioned in Schedule 2 to the said Regulations, and except as provided in paragraph 7 hereof, asbestos (as defined in the said Regulations) and chloroform in a concentration greater than the background concentration (as defined in the said Regulations);

f) organo-halogen compounds including pesticide residues and degreasing agents;

g) any substances which either alone or in combination with each other or with any other matter lawfully present in the said sewers would be likely to;

i cause a nuisance or produce flammable, harmful or toxic vapours either in the sewers or at the sewage works of the Company;

ii injure the sewers or interfere with the free flow of their contents or affect prejudicially the treatment and disposal of their contents or have injurious effects on the sewage treatment works to which it is conveyed or upon any treatment plant there;

iii be dangerous to or cause injury to any person working in the sewers or at the sewage treatment works;

iv affect prejudicially any watercourse, estuary or coastal water into which the treated wastewater will eventually be discharged.

Matters to be limited prior to discharge to the sewer

7. The wastewater shall not contain

a) sulphides, hydrosulphides, polysulphides and substances producing hydrogen sulphide on acidification in excess of **1** mg/l

b) cyanides and cyanogen compounds which produce hydrogen cyanide on acidification in excess of **1** mg/l

c) sulphates as SO_4 in excess of **1000** mg/l.

d) Total suspended solids at pH 7.0 and dried at 110°C in excess of **400** mg/l

e) Settled chemical oxygen demand in excess of **1,000 mg/l**

f) Toxic metals in excess of **10,000** ug/l either individually or in total i.e. Antimony, Beryllium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Tin, Vanadium, Zinc;

g) Separable grease and oil in excess of **100** mg/l

h) Chloroform and its compounds in excess of **100** ug/l

i) Arsenic and its compounds in excess of **50** ug/l

j) Methane in excess of **0.14** mg/l

k) Total Nitrogen (including ammonia) in excess of **250** mg/l

l) Iron and its compounds in excess of **50,000** ug/l

Sampling and flow measurement

8. a) A flow metering device is to be installed at the discharge point and is to be maintained by the applicant to the satisfaction of the Company, or another means of assessing the volume of wastewater discharged is to be agreed in writing. Records must be kept and provided when requested.

b) (i) A sampling point is to be provided so as to enable an authorised member of the Company's staff safely to obtain a sample of effluent passing to sewer. Such authorised members of staff shall be given free and ready access to the sampling point at all times.

(ii) Representative samples of the wastewater may be obtained from **the sample tap at the settlement / methane removal treatment tank outfall point**

c) The Trade Effluent department should be notified of all various discharges during the commissioning phase in order that adequate samples can be taken to monitor the discharge.

pH value

9. No wastewater shall be discharged having a pH of less than 6 or greater than 10.

Temporary Agreement

Reference TWBAM05226323 – revised dates

WwTW Davyhulme

Temperature	10.	No wastewater shall be discharged which has a temperature higher than 43.3^{0}C (110^{0}F)
Cessation of Discharge	11.	In order to protect the sewer network and treatment processes it is essential that, should it be deemed necessary, the discharge to sewer will be terminated immediately on verbal instruction to your staff from the trade Effluent department.
Breach of Agreement	12.	If any wastewater is discharged to the sewer in excess or in breach of the conditions of this agreement a) The discharger shall notify the company on becoming aware of such a breach and shall immediately cease the discharge b) If the company detects such a breach they shall notify the discharger and if required by the company the discharger shall immediately cease the discharge.
Disputes	13.	a) The Parties shall attempt to resolve all disputes and differences between themselves but if any dispute remains unresolved for more than 30 calendar days after it first arose it shall be referred to the Parties' Senior Management for resolution. b) If the parties are unable to reach a resolution between them or through senior management then any dispute arising out of or in connection with this agreement shall be determined by a single arbitrator to be agreed between the parties.

Signed _____ Date _____

Print Name _____

For and on behalf of **BAM Nuttall Limited**

Signed _____ Date _____

Print Name _____

For and on behalf of United Utilities Water Limited

Preston City Council

Environmental Health Department
Pollution Prevention and Control Act 1999

PERMIT
PCC110/2022

Lancashire Crushers Limited
Ashes Barn
Church Lane
Whitechapel
Preston
PR3 2EP

Pollution Prevention and Control Act 1999
Environmental Permitting (England & Wales) Regulations 2016

Permit Reference PCC110/2022

Contents

Section

1. **Description of Permitted Installation and Operator**
2. **Permit Conditions**
3. **List of Permitted Plant**
4. **Explanatory Note and Appeals Procedure.**

Section One

Description of Permitted Installation and Operator Details

PRESTON CITY COUNCIL
PERMIT

POLLUTION PREVENTION AND CONTROL ACT 1999
Environmental Permitting (England and Wales) Regulations 2016

Permit Reference No: PCC110/2022

Name and Address of Operator

Lancashire Crushers Limited
Ashes Barn
Church Lane
Whitechapel
Preston
PR3 2EP

Registered number and office of company

Lancashire Crushers Limited
Mentor House
Ainsworth Street
Blackburn
Lancashire
BB1 6AY

Company registration no. 07024181

Activity description

The above named company is permitted to operate a mobile process for the crushing of brick, tile and concrete utilising the list of permitted mobile plant as attached in Section 3 subject to compliance with the conditions contained within Section 2 of this permit.

The operator is authorised to operate the activity at the installation subject to compliance with the conditions contained within section 2 of this permit.

This Permit shall come into force on the 27th September 2022

[redacted]

Senior Environmental Health Officer (Environmental Protection)

Section Two

Permit Conditions

CONDITIONS

Asbestos

1. Asbestos shall not be crushed or screened.

Notifications

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

3. The operator shall submit to the regulator who issued the permit any changes to the list of permitted plant as detailed in Section 3 of this permit. The plant new to the list shall not be used until the regulator has approved the alteration to the list of permitted plant.

Emissions and monitoring

4. No visible particulate matter shall be emitted beyond the installation boundary.

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

Table 1 - Emission limits, monitoring and other provisions

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

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

Aggregates treatment and storage

7. Dusty materials (including dusty wastes) shall be subject to suppression and management techniques to minimise dust emissions.

Crushers and screening units

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

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

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

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

Belt conveying

12. All dusty materials, including wastes, moved using conveyors shall be protected from wind entrainment and side winds. All transfer points shall where necessary, be enclosed, hooded or used with dust suppression to minimise the wind entrainment of dust.

Loading, unloading and transport

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

Roadways and transportation

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

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

Records and training

16. Written or computer records of all tests and monitoring shall be kept by the operator for at least 2 years. They and a copy of all manufacturer's instructions referred to in this permit shall be made available for examination by the Council. Records shall be kept of operator inspections, including those for visible emissions.

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

Best available techniques

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

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

Section Three

List of Permitted Plant

List of Permitted Plant

No.	Ref. no.	Make	Model	Year of manufacture	Serial No.
1	CR8	Pegson Jaw Track Crusher	XA400S	2013	PIDXA40SCOMD36664
2	CR15	Pegson Jaw Track Crusher	XA400S	2012	PIDXA40ST0MC34735
3	CR17	Sandvik Tracked Jaw Crusher	QJ341	2015	QJ34100212
4	SC12	Powerscreen Tracked Screener	Warrior 1400X	2015	PID00133KDGF30224
5	CR19	Rubble Master	RM70GO!	2018	2.0-01.343
6	CR20	Sandvik Tracked Jaw Crusher	QJ241	2021	QJ24110194
7	CR21	Sandvik Tracked Jaw Crusher	QJ341+	2020	QJ34110184
8	CR22	Powerscreen Premiertrak	400X	2017	PIDPT40XLOMHB5614
9	CR23	Powerscreen Premiertrak	PT400X	2021	PIDPT40XJOMM65609
10	CR24	Powerscreen Premiertrak	R400X	2022	PIDPR40XPOMN68797
11	CR25	Keestrack	B3	2021	712100100
12	SC23	Portafill	5000CT	2017	CT433
13	SC22	Powerscreen Warrior	1400X	2021	PID00133CDGM14282

Section Four

Explanatory Notes
and
Appeals Procedure

EXPLANATORY NOTES

These notes are provided for the operator of an installation or mobile plant to assist in the interpretation of their duties under the provisions of the permit issued by Preston City Council.

These notes DO NOT form part of the Permit or conditions attached to it.

1. SECRETARY OF STATE'S GUIDANCE

This permit is covered by Secretary of State's Guidance:

Process Guidance Note PG 3/16 (12) September 2012
Pollution Prevention and Control Act 1999
Environmental Permitting (England & Wales) Regulations 2016 (hereafter referred to as the "EP Regs.")
General Guidance Manual on Policy and Procedures for A2 and B Installations

2. BEST AVAILABLE TECHNIQUES (BAT) CONDITION

The Integrated Pollution Prevention and Control Directive 2008/1/EC (Article 3), Environmental Permitting (England & Wales) Regulations 2016 (Schedule 8 Paragraph 5(1)(a), and the General Guidance Manual on Policy and Procedures for A2 and B Installations require that the installation or mobile plant should be operated in accordance with the general principles such that -

(a) all the appropriate preventative measures are taken against pollution, in particular through application of the best available techniques; and

(b) no significant pollution is caused.

Chapter 12 and Annex VIII of the General Guidance Manual describe the concept of BAT and the factors to be considered in determining BAT for installations.

In relation to the Permit you should be aware that, amongst other aspects of the installation operation and management, this residual duty will apply to:-

- the control of emissions to ensure that offensive odours are not caused beyond the installation boundary,
- maintenance, service and repair of equipment,
- keeping of spares and consumables,
- the training of installation operators, and supervision of workers
- management of the installation in relation to maintenance of a high standard of housekeeping.

STATUTORY REQUIREMENTS

This Permit is issued under Regulation 13 of the EP Regs. and does not detract from any of the following statutory requirements where applicable:-

(a) The requirement to obtain Planning Permission and /or Building Regulations approval for the installation and any new construction.
(b) The requirement to comply with the Health and Safety at Work etc Act 1974.
(c) The requirement to obtain any other licences or permissions under any other legislation.

3. PUBLIC REGISTER

The Council is required by the EP Regs. to maintain a Public Register containing information on all LAPPC installations and mobile plant. The register is available for inspection by the public free of charge during office hours (Monday to Friday 9.00am to 4.00pm) at

Environmental Health Department
Preston City Council
Town Hall
Lancaster Road
Preston
PR1 2RL

In accordance with the EP Regulation 46(1) and Schedule 27, public registers will contain the following, subject to exclusions of commercially confidential information and information affecting national security:

1. Applications for a permit and decisions
2. Notices asking for information and responses to such
3. Representations in response to public consultation on applications (unless the person responding asks for their response to be withheld, in which case a statement must be included to the effect that a representation was made but has been omitted from the register on request. The statement must not identify the person making the representation)
4. Permits
5. Notifications of changes in the operation of installations
6. Applications for variations, transfers or surrenders of permits and decisions
7. Variations, transfers and surrenders granted
8. Enforcement, suspension notices and revocation notices
9. Notices withdrawing enforcement, suspension or revocation notices
10. Notice of an appeal including the grounds of the appeal, relevant correspondence between the appellant and the regulator, and the decision/notice which is the subject of the appeal
11. Representations in response to appeal (unless the person responding asks for their response to be withheld, in which case a statement must be included to the effect that a representation was made but has been omitted from the register on request. The statement must not identify the person making the representation)
12. The appeal decision and any accompanying report
13. Convictions, formal cautions; to include the name of the person, date of conviction/caution, and (where appropriate) penalty and name of court. This requirement does not override the Rehabilitation of Offenders Act 1974 regarding spent conditions, and authorities must take care to remove relevant entries at the appropriate

time. Paragraph 3 of Schedule 26 to the EP Regs. requires that details of formal cautions must be removed 5 years after the caution was given

14. Monitoring data obtained by the authority from its own monitoring, or sent to the authority on accordance with a permit condition or a Regulation 61 information notice. If any monitoring information is omitted because it is commercially or industrially confidential, the authority must put a statement on the register indicating whether relevant permit conditions containing emission limits are being complied with, based on the withheld information
15. Any other information supplied by the operator in compliance with a condition, or an information, variation, enforcement or suspension notice
16. Any report published by the local authority relating to assessment of environmental consequences of the operation of an installation
17. Any directions given by the Secretary of State other than a national security direction under the EP Regulation 47
18. Cost accounts for the LA-IPPC/LAPPC function

Commercial Confidentiality

An operator may request certain information to remain confidential, i.e. not be placed on the public register. The onus is on the operator to provide a clear justification for each item he or she wishes to be kept from the register. EP regulation 2(1) defines ‘confidential information’ as “information that is commercially or industrially confidential in relation to any person”.

If an operator wants confidential information to be excluded from the register he or she should make a request at the time the information is submitted, whether as part of an application, as monitoring information, or for any other purpose. The amount of information asked to be excluded from the register should be kept to the minimum necessary to safeguard the operator's commercial advantage

The local authority must reach a decision on whether information must be withheld from the register within 20 working days (or such longer period as is agreed with the operator) of the date when the operator requests information to be excluded or the date when the operator objects to information being included after a notification by an authority or the date 15 working days onward from when notice is given if, by then, no response has been received to that notice.

The authority may only determine requests based on the information provided to them. If the information provided does not clearly demonstrate that information should be legitimately protected, the authority must determine that it is not confidential.

Once a decision is determined, the local authority will issue a Determination Notice detailing their decision. If a determination is made regarding the confidentiality of monitoring information and the information is to be withheld from the public register, a statement is required in the register indicating whether the operator has complied with permit conditions.

The operator may appeal within 15 working days of the date of the deemed decision (i.e. the notice).
EP Regulation 55 says that an authority may only grant confidentiality for up to four years. An authority can specify a shorter period when they make the original decision.

An operator must re-apply for commercial confidentiality before the end of the four years (or shorter period). If the operator does not do so, authorities must place all previously commercially confidential information on the public register.

Full details on commercial confidentiality can be found in Chapter 8 of the Secretary of State's General Guidance Manual on Policy and Procedures for A2 and B Installations.

National Security

EP Regulation 47 allows for information to be kept from public registers for reasons of national security. For this to happen, the Secretary of State must determine that placing the information on the register would be contrary to the interests of national security. An operator who believes any information meets this test may apply to the Secretary of State. The operator must notify the local authority that he or she has asked for this determination, but must not exclude the information from any submission to the authority, such as a permit application. The Secretary of State may direct the authority on what information, if any, to exclude from the register.

4. FEES

In accordance with Regulation 66 of the EP Regs., the holder of an Environmental Permit is required to pay a fee for the subsistence of the permit. This fee is payable annually on 1st April. You are advised that if you fail to pay the fee due promptly, the Council may revoke the permit.

5. TRANSFER OF ENVIRONMENTAL PERMITS

Under the provisions of Regulation 21 of the EP Regs., where you wish to transfer the Environmental Permit to another person (the proposed transferee) then the operator and the proposed transferee shall jointly make an application to the Council. The council will determine the transfer application within 2 months. For further details on this please contact the Council.

6. PROCESS CHANGES

Under Article 12(1) of the IPPC Directive, if the operator proposes to make a change in operation of the installation, he must, at least 14 days before making the change, notify the regulator in writing. The notification must contain a description of the proposed change in operation. It is not necessary to make such a notification if an application to vary this permit has been made and the application contains a description of the proposed change. In this condition 'change in operation' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.

7. APPEALS

Under regulation 31 of the EP Regs., operators have the right of appeal against certain decisions made by the local authority, namely:

1. Refusal or deemed refusal to grant a permit;
2. Refusal of an application to vary a permit;
3. If the operator disagrees with the conditions imposed by the authority as a result of a permit application or an application for a variation notice;
4. Refusal of an application to transfer a permit, or if the operator disagrees with the conditions imposed by the authority to take account of such a transfer;

5. Refusal of an application to surrender a permit, or if the operator disagrees with the conditions imposed by the authority to take account of the surrender;
6. The service of a variation notice (not following an application by the operator), a revocation notice, an enforcement notice, or a suspension notice on the operator;
7. The deemed withdrawal by a local authority of a duly-made application because the operator has not provided further information.

Under EP regulation 53(1) operators have the right of appeal against a decision that information will not be withheld from the public register for reasons of commercial confidentiality.

The rights to appeal listed in 1-6 above do not apply where the decision or notice implements a direction given by the Secretary of State. There is also no right of appeal if a revocation notice has been served for non-payment of subsistence fees

Appeals under 3-6 above do not stop the conditions coming into effect. Appeals against variation, enforcement and suspension notices do not stop the notices coming into effect. However, appeals against revocation notices suspend the operation of the notices coming into effect until the appeal is decided or withdrawn.

Schedule 6 of the EP Regs. sets out the detailed procedures.

Timing of Appeals

Notice of appeal must be given within the time-scales detailed below. The Secretary of State has the power to extend some of the limits but would only do so in the most exceptional circumstances.

- Appeals listed in 1-5 above must be received by the Planning Inspectorate within six months of the date of the decision or deemed decision which is the subject matter of the appeal;
- Revocation notice appeals must be received by the Planning Inspectorate before the date on which the revocation takes effect;
- Appeals against a variation notice (not requested by the operator), an enforcement notice, or a suspension notice, must be received by the Planning Inspectorate within two months of the date of the notice which is the subject of the appeal;
- Appeals in relation to confidentiality must be received by the Planning Inspectorate within 15 working days after the local authority has given its determination;
- Appeals in relation to deemed withdrawal of duly made applications must be received by the Planning Inspectorate not later than 15 working days from the date the notice of deemed withdrawal is served.

Note- Prior to making an appeal you are advised to contact one of the officers listed below to discuss your grievances in order that any unnecessary appeals may be avoided.

Environmental Health Manager	**Chris Hodson**	**01772 906154**
Senior Environmental Health Officer	**Louise Purdy**	**01772 906861**

How to appeal

There are no forms or charges for appealing. However, for an appeal to be valid, appellants (the person/operator making the appeal) are legally required to provide

- written notice of the appeal
- a statement of the grounds of appeal
- a statement indicating whether the appellant wishes the appeal to be dealt with by written representations procedure or at a hearing - a hearing must be held if either the appellant or local authority requests this, or an appointed person or the Secretary of State/Welsh Ministers decide to hold one
- (appellants must copy the above three items to the local authority when the appeal is made)
- a copy of any relevant application
- a copy of any relevant permit
- a copy of any relevant correspondence between the appellant and the regulator
- a copy of any decision or notice, which is the subject matter of the appeal.

Appellants should state whether any of the information enclosed with the appeal has been the subject of a successful application for commercial confidentiality under EP regulation 49 and provide relevant details. Unless such information is provided all documents submitted will be open to inspection.

Where to send your appeal documents

Appeals should be despatched on the day they are dated, and addressed to:

The Planning Inspectorate
Environment Team,
Major & Specialist Casework
Room 4/04 Kite Wing
Temple Quay House
2 The Square
Temple Quay
Bristol BS1 6PN
tel: 0117 372 8726 fax: 0117 372 8139

On receipt of an appeal and during the appeal process both main parties will be informed by the Inspectorate about the next steps, which will explain the procedures and submission timetable for representations.

To withdraw an appeal – which may be done at any time - the appellant must notify the Planning Inspectorate in writing and copy the notification to the local authority who must in turn notify anyone who has expressed an interest in the appeal.

Costs

The operator and local authority will normally be expected to pay their own expenses during an appeal. Where an appeal is dealt with by hearing, inquiry or written representations, by virtue of paragraph 5(6) of Schedule 6 of the EP Regs., either the appellant or the authority can apply for costs. Applications for costs are normally heard towards the end of the proceedings and will only be considered if the party claiming them can show that the other

side behaved unreasonably and put them to unnecessary expense. There is no provision for costs to be awarded where appeals are dealt with by written representations.

8. REPORTING REQUIREMENTS AND CONTACT DETAILS

Where an Environmental Permit condition imposes a requirement to forward documents to the Local Authority or to report a specified occurrence, the following address and telephone number shall be used:

By Post:

Preston City Council,
Environmental Health Department
Town Hall
Lancaster Road
Preston
Lancashire
PR1 2RH

By Telephone:

During office hours:	**01772 906907**
Outside office hours:	**01772 253421**
Facsimile No.:	**01772 906313**
Email:	**info@preston.gov.uk**

C.4 Perched water testing

TEST REPORT

Report Number: 2024-426

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753635
Issue : 1
Date of Receipt : 06/03/24
Date of Analysis : 13/03/24
Date of Report : 18/03/24
Sample Type : Groundwater
Customer Sample Identifier : 24/02228/1
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
Client requested full PFAS 49 Suite.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-426
Customer Sample Identifier : 24/02228/1
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
3:3 FTCA	356-02-5	2	ng/l	ND
4:2 FTSA; 4:2 FTS	757124-72-4	1	ng/l	ND
PFecHS	335-24-0	1	ng/l	ND
5:3 FTCA	914637-49-3	2	ng/l	ND
6:2 FTSA; 6:2 FTS	27619-97-2	1	ng/l	ND
7:3 FTCA	812-70-4	2	ng/l	ND
8:2 FTSA; 8:2 FTS	39108-34-4	1	ng/l	ND
6:2 Cl-PFESA; 9Cl-PF3ONS	756426-58-1	1	ng/l	ND
10:2 FTS	108026-35-3	1	ng/l	ND
8:2 Cl-PFESA; 11Cl-PF3OUdS	763051-92-9	1	ng/l	ND
DONA; ADONA	919005-14-4	1	ng/l	ND
EtFOSE	1691-99-2	1	ng/l	ND
FBSA	30334-69-1	1	ng/l	ND
FHxSA	41997-13-1	1	ng/l	ND
FOSAA	2806-24-8	1	ng/l	ND
HFPO-DA (Gen X)	13252-13-6	1	ng/l	ND
HFPO-TA	13252-14-7	1	ng/l	ND
EtFOSA; N-EtFOSA	4151-50-2	1	ng/l	ND
NEtFOSAA; EtFOSAA	2991-50-6	1	ng/l	ND
NFDHA	151772-58-6	1	ng/l	ND
MeFOSA; N-MeFOSA	31506-32-8	1	ng/l	ND
NMeFOSAA; MeFOSAA	2355-31-9	1	ng/l	ND
MeFOSE	24448-09-7	1	ng/l	ND
PFBA	375-22-4	1	ng/l	28.6
PFBS	375-73-5	1	ng/l	5.58
PFDA	335-76-2	1	ng/l	ND
PFDoA	307-55-1	1	ng/l	ND
PFDoS	79780-39-5	1	ng/l	ND
PFDS	335-77-3	1	ng/l	ND
PFEESA	113507-82-7	1	ng/l	ND
PFHpA	375-85-9	1	ng/l	10.1
PFHpS	375-92-8	1	ng/l	ND
PFHxA	307-24-4	1	ng/l	15.7
PFHxDA	67905-19-5	1	ng/l	ND
PFHxS Linear	355-46-4	1	ng/l	1.41
PFHxS Branched *	-	1	ng/l	ND
PFHxS Total *	-	1	ng/l	1.41
PFMOBA	863090-89-5	1	ng/l	ND
PFMOPrA	377-73-1	1	ng/l	ND

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-426
Customer Sample Identifier : 24/02228/1
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
PFNA	375-95-1	1	ng/l	1.49
PFNS	68259-12-1	1	ng/l	ND
PFOA Linear	335-67-1	1	ng/l	18.1
PFOA Branched *	-	1	ng/l	ND
PFOA Total *	-	1	ng/l	18.1
PFODA	16517-11-6	1	ng/l	ND
PFOS Linear	1763-23-1	1	ng/l	15.6
PFOS Branched *	-	1	ng/l	8.17
PFOS Total *	-	1	ng/l	23.7
FOSA (PFOSA)	754-91-6	1	ng/l	ND
PFPeA	2706-90-3	1	ng/l	27.3
PFPeS	2706-91-4	1	ng/l	ND
PFTeA	376-06-7	1	ng/l	ND
PFTrDA (PFTriA)	72629-94-8	1	ng/l	ND
PFUdA; PFUnA	2058-94-8	1	ng/l	ND
PFUnDS	749786-16-1	1	ng/l	ND

** Non Accredited*

ND - not detected

TEST REPORT

Report Number: 2024-427

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753635
Issue : 1
Date of Receipt : 06/03/24
Date of Analysis : 13/03/24
Date of Report : 18/03/24
Sample Type : Groundwater
Customer Sample Identifier : 24/02228/2
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
Client requested full PFAS 49 Suite.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-427
Customer Sample Identifier : 24/02228/2
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
3:3 FTCA	356-02-5	2	ng/l	ND
4:2 FTSA; 4:2 FTS ^	757124-72-4	1	ng/l	ND
PFecHS	335-24-0	1	ng/l	ND
5:3 FTCA	914637-49-3	2	ng/l	ND
6:2 FTSA; 6:2 FTS	27619-97-2	1	ng/l	ND
7:3 FTCA	812-70-4	2	ng/l	ND
8:2 FTSA; 8:2 FTS	39108-34-4	1	ng/l	ND
6:2 Cl-PFESA; 9Cl-PF3ONS	756426-58-1	1	ng/l	ND
10:2 FTS	108026-35-3	1	ng/l	ND
8:2 Cl-PFESA; 11Cl-PF3OUdS	763051-92-9	1	ng/l	ND
DONA; ADONA	919005-14-4	1	ng/l	ND
EtFOSE	1691-99-2	1	ng/l	ND
FBSA	30334-69-1	1	ng/l	1.27
FHxSA	41997-13-1	1	ng/l	ND
FOSAA	2806-24-8	1	ng/l	ND
HFPO-DA (Gen X)	13252-13-6	1	ng/l	ND
HFPO-TA	13252-14-7	1	ng/l	ND
EtFOSA; N-EtFOSA	4151-50-2	1	ng/l	ND
NEtFOSAA; EtFOSAA	2991-50-6	1	ng/l	ND
NFDHA	151772-58-6	1	ng/l	ND
MeFOSA; N-MeFOSA	31506-32-8	1	ng/l	ND
NMeFOSAA; MeFOSAA	2355-31-9	1	ng/l	ND
MeFOSE	24448-09-7	1	ng/l	ND
PFBA	375-22-4	1	ng/l	7.91
PFBS	375-73-5	1	ng/l	4.7
PFDA	335-76-2	1	ng/l	1.24
PFDoA	307-55-1	1	ng/l	ND
PFDoS	79780-39-5	1	ng/l	ND
PFDS	335-77-3	1	ng/l	ND
PFEESA	113507-82-7	1	ng/l	ND
PFHpA	375-85-9	1	ng/l	14.1
PFHpS	375-92-8	1	ng/l	ND
PFHxA	307-24-4	1	ng/l	16
PFHxDA	67905-19-5	1	ng/l	1.26
PFHxS Linear	355-46-4	1	ng/l	3.28
PFHxS Branched *	-	1	ng/l	ND
PFHxS Total *	-	1	ng/l	3.28
PFMOBA	863090-89-5	1	ng/l	ND
PFMOPrA	377-73-1	1	ng/l	ND

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-427
Customer Sample Identifier : 24/02228/2
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
PFNA	375-95-1	1	ng/l	3.74
PFNS	68259-12-1	1	ng/l	ND
PFOA Linear	335-67-1	1	ng/l	20.8
PFOA Branched *	-	1	ng/l	1.2
PFOA Total *	-	1	ng/l	22
PFODA	16517-11-6	1	ng/l	ND
PFOS Linear	1763-23-1	1	ng/l	16
PFOS Branched *	-	1	ng/l	9.39
PFOS Total *	-	1	ng/l	25.4
FOSA (PFOSA)	754-91-6	1	ng/l	ND
PFPeA	2706-90-3	1	ng/l	16.9
PFPeS	2706-91-4	1	ng/l	ND
PFTeA	376-06-7	1	ng/l	ND
PFTrDA (PFTriA)	72629-94-8	1	ng/l	ND
PFUdA; PFUnA	2058-94-8	1	ng/l	ND
PFUnDS	749786-16-1	1	ng/l	ND

** Non Accredited*
^ The recovery of ES standard >130%
NB - The above does not affect the results as recoveries % within EPA1633 method range.

ND - not detected

TEST REPORT

Report Number: 2024-428

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753635
Issue : 1
Date of Receipt : 06/03/24
Date of Analysis : 13/03/24
Date of Report : 18/03/24
Sample Type : Groundwater
Customer Sample Identifier : 24/02228/3
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
Client requested full PFAS 49 Suite.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-428
Customer Sample Identifier : 24/02228/3
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
3:3 FTCA	356-02-5	2	ng/l	ND
4:2 FTSA; 4:2 FTS	757124-72-4	1	ng/l	ND
PFecHS	335-24-0	1	ng/l	ND
5:3 FTCA	914637-49-3	2	ng/l	ND
6:2 FTSA; 6:2 FTS	27619-97-2	1	ng/l	ND
7:3 FTCA	812-70-4	2	ng/l	ND
8:2 FTSA; 8:2 FTS	39108-34-4	1	ng/l	ND
6:2 Cl-PFESA; 9Cl-PF3ONS	756426-58-1	1	ng/l	ND
10:2 FTS	108026-35-3	1	ng/l	ND
8:2 Cl-PFESA; 11Cl-PF3OUdS	763051-92-9	1	ng/l	ND
DONA; ADONA	919005-14-4	1	ng/l	ND
EtFOSE	1691-99-2	1	ng/l	ND
FBSA	30334-69-1	1	ng/l	ND
FHxSA	41997-13-1	1	ng/l	ND
FOSAA	2806-24-8	1	ng/l	ND
HFPO-DA (Gen X)	13252-13-6	1	ng/l	ND
HFPO-TA	13252-14-7	1	ng/l	ND
EtFOSA; N-EtFOSA	4151-50-2	1	ng/l	ND
NEtFOSAA; EtFOSAA	2991-50-6	1	ng/l	ND
NFDHA	151772-58-6	1	ng/l	ND
MeFOSA; N-MeFOSA	31506-32-8	1	ng/l	ND
NMeFOSAA; MeFOSAA	2355-31-9	1	ng/l	ND
MeFOSE	24448-09-7	1	ng/l	ND
PFBA	375-22-4	1	ng/l	9.39
PFBS	375-73-5	1	ng/l	1.87
PFDA	335-76-2	1	ng/l	ND
PFDoA	307-55-1	1	ng/l	ND
PFDoS	79780-39-5	1	ng/l	ND
PFDS	335-77-3	1	ng/l	ND
PFEESA	113507-82-7	1	ng/l	ND
PFHpA	375-85-9	1	ng/l	3.47
PFHpS	375-92-8	1	ng/l	ND
PFHxA	307-24-4	1	ng/l	3.83
PFHxDA	67905-19-5	1	ng/l	1.19
PFHxS Linear	355-46-4	1	ng/l	1.25
PFHxS Branched *	-	1	ng/l	1.25
PFHxS Total *	-	1	ng/l	2.5
PFMOBA	863090-89-5	1	ng/l	ND
PFMOPrA	377-73-1	1	ng/l	ND

Results PFAS

Sample Type : Groundwater
Test Report Number : 2024-428
Customer Sample Identifier : 24/02228/3
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
PFNA	375-95-1	1	ng/l	1.71
PFNS	68259-12-1	1	ng/l	ND
PFOA Linear	335-67-1	1	ng/l	14.1
PFOA Branched *	-	1	ng/l	ND
PFOA Total *	-	1	ng/l	14.1
PFODA	16517-11-6	1	ng/l	ND
PFOS Linear	1763-23-1	1	ng/l	26.3
PFOS Branched *	-	1	ng/l	13.4
PFOS Total *	-	1	ng/l	39.7
FOSA (PFOSA)	754-91-6	1	ng/l	ND
PFPeA	2706-90-3	1	ng/l	4.75
PFPeS	2706-91-4	1	ng/l	ND
PFTeA	376-06-7	1	ng/l	ND
PFTrDA (PFTriA)	72629-94-8	1	ng/l	ND
PFUdA; PFUnA	2058-94-8	1	ng/l	ND
PFUnDS	749786-16-1	1	ng/l	ND

** Non Accredited*

ND - not detected

C.5 Environmental monitoring

Project

Victoria North
Air Quality and Dust Management Plan

Prepared for

BAM Nuttall Ltd
Mikasa House
Asama Court
Newcastle-upon-Tyne
NE4 7YD

By

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Published

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Document Title	Air Quality and Dust Management Plan
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Revision History

Revision	Date	Comments
P2	24/04/23	Updates to Monitoring Across a Line
P1	13/04/23	First Issue

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Summary

Victoria North is one of the largest regeneration projects in the UK and the largest single opportunity for residential redevelopment in Manchester, intended to provide 15,000 homes.

The site is adjacent to the Manchester Air Quality Management Area (AQMA). This AQMA was defined by Manchester City Council (MCC) for annual mean exceedances of NO_2.

The risk of dust impact due to construction activity associated with the proposed development is assessed to be medium risk for dust soiling and low risk for human health effects.

Through general good site practice and by adopting suitable mitigation measures outlined in **Section 7.0**, I do not expect any adverse effects related to construction dust. The contractor must apply suitable mitigation measures as outlined in the appendices.

This AQDMP should be reviewed to address changes to any construction or demolition activities, or to any dust or NO_x emitting activities.

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1.0 Introduction

Victoria North is one of the largest regeneration projects in the UK and the largest single opportunity for residential redevelopment in Manchester, intended to provide 15,000 homes.

The potential air quality impacts associated with the proposed development relate to:

- dust and particulate matter generated by construction activities
- increase in concentrations of oxides of nitrogen (NO_x) and particulate matter (PM_{10}) due to emissions from construction activities on site.

This assessment looks at the existing air quality conditions around the site, considers the local and national policy context, and describes the proposed assessment methodology.

Figure 1. Site Area



1.0 Relevant Policy and Guidance

The Air Quality Strategy

The Air Quality Strategy for England, Scotland, Wales, and Northern Ireland[1] sets out air quality objectives and policy options to improve air quality in the UK. The main aim of the Strategy is to ensure that ambient air quality is of an acceptable level to protect human health and the environment. It takes account of the Limit Values set out in EU legislation.

Local Air Quality Management (LAQM)

The Environment Act 1995 introduced the LAQM system, whereby local authorities have a duty to review and assess air quality within their areas against the air quality objectives defined in the Air Quality Strategy. Where exceedances of the objectives are identified during this process, the authority must then declare an Air Quality Management Area (AQMA) and define the measures which will be implemented to improve air quality.

National Planning Policy Framework (NPPF)

The NPPF (2019)[2] sets out the Government's planning policies for England and outlines how they are expected to be applied to achieve the Government's aim of sustainable development. The NPPF states that:

> "*Planning policies and decisions should also ensure that new development is appropriate for its location, taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.*"
>
> "*Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement… Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.*"

Manchester Local Development Framework: Core Strategy Development Plan Document

Manchester City Council state in Policy EN 16[3]:

> *"The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from*

[1] Department for Environment, Food and Rural Affairs (DEFRA) and the Devolved Administrations (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2).

[2] Department for Communities and Local Government (2019).

[3] Manchester City Council (2012). Core Strategy Development Plan Document.

traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.

When assessing the appropriateness of locations for new development the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in Air Quality Management Areas."

Guidance

The following guidance documents have also been used where appropriate, in this assessment:

- Local Air Quality Management Technical Guidance (LAQM.TG(16))[4]
- Land-Use Planning and Development Control: Planning for Air Quality. V1.2[5]
- National Planning Practice Guidance - Air Quality[6]
- Guidance on the Assessment of Dust from Demolition and Construction[7]

[4] DEFRA (2018). Part IV of the Environment Act 1995 Environment (Northern Ireland) Order 2002 Part III Local Air Quality Management Technical Guidance (TG16).

[5] Environmental Protection UK / Institute of Air Quality Management (2017).

[6] Department of Communities and Local Government (DCLG) (2014).

[7] Institute of Air Quality Management (2014)

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2.0 Construction Programme

2.1 Demolition Works

Demolition works will include the demolition of Red Bank Viaduct (retaining wall), removal of the concrete turntable, and the clearance of obstructions 2m below sub-formation level. The full demolition methodology is not yet available; this must be added to this document once available.

2.2 Construction Works

The works packages are:

- Package 1: Leachate Phase 1
- Package 2: Redbank Junction Entrance
- Package 3: Plateau Road
- Package 4: Red Bank and Roger Street Utilities
- Package 5: Dantzic Street Utilities
- Package 6: U-Tubes
- Package 7: ENWL
- Package 8: St Catherines Wood Parts 1, 2, 3 & 4
- Package 9: Interim Leachate Solution
- Package 10: Leachate Phase 2
- Package 11: Highways Phase 2

Specific potentially dusty works involved in these works packages include earthworks cut & fill, site clearance, road construction, footpath construction, and excavations.

2.3 Water Supply

There will be several water supplies on site to enable dust suppression. There will be an onsite lagoon for dust suppression, with water being pumped from excavations and allowed to settle. The road sweeper will source water either from wash out or from site water supply.

2.4 Drainage

Site construction water will be managed to the onsite lagoon for dust suppression or via temporary discharge consent. Surface water drainage will be used to remove water from site.

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3.0 Dust Risk Assessment

3.1 Dust Emission Magnitude

Activities may generate dust and particulate matter, as well as exhaust emissions from construction vehicles and plant, during the construction phase, which could result in complaints of nuisance and human health effects.

The likely level of risk has been assessed following guidance published by the Institute of Air Quality Management (IAQM). The assessment considers the nature and scale of the activities undertaken and the sensitivity of the surrounding area. Mitigation measures proportionate to the level of risk identified are then set out.

The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four different dust and PM_{10} sources: demolition, earthworks, construction, and trackout.

3.1.1 Demolition

Creamline Dairies has already been demolished, but the remaining demolition works will include:

- Demolition of Red Bank Viaduct (retaining wall) up to 5m-6m above ground, approximately 300m^3
- Removal of concrete turntable 1m above ground, approximately 75m^3
- Clearance of obstructions 2m below sub-formation level (former carriage shed/gas works), approximately 200m^3

The total volume of demolition is therefore approximately 575m^3. The main materials being demolished will likely be concrete and brickwork. The potential dust emission magnitude from demolition is judged to be small, following IAQM guidance.

3.1.2 Earthworks

The total site area is 157,087m^2, with the total working area being 93,960m^2. Earthworks will take place across most of the site. The total excavation volume is 48,058.3m^3, based on the Initial Cut Fill Map (MCL/BAM2201/001). The site is located on *loam to clayey loam* and *sand to sandy loam*[8]; clay is prone to suspension in the air when dry due to its small particle size. More than 10 earth-moving vehicles may operate on site at any one time based on the size of the site. The potential dust emission magnitude from earthworks is judged to be large, following IAQM guidance.

3.1.3 Construction

No construction works are planned at this stage, though a treatment works of approximately 100m^3 may be constructed. Dust emissions are therefore screened out. This document will be updated with the dust impacts of construction if any construction works are to occur.

[8] UK Soil Observatory (2023). Accessed via https://mapapps2.bgs.ac.uk/ukso/home.html.

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3.1.4 Trackout

It is estimated there will be 29,000 construction vehicle movements over the 79 week construction period, which is a daily average of approximately 52 movements. It is possible these vehicles may travel over more than 100m of unpaved road based on the size of the site. The potential dust emission magnitude from trackout is judged to be large, following IAQM guidance.

3.1.5 Summary of Dust Emission Magnitude

Table 1. Dust Emission Magnitude

Activity	Dust Emission Magnitude
Demolition	Small
Earthworks	Large
Construction	N/A
Trackout	Large

3.2 Sensitivity of the Study Area

3.2.1 Dust Soiling Effects

There are several commercial receptors around the site, which are considered as having medium sensitivity to dust soiling effects. There are also residential receptors to the south of the site, including Emmeline Apartments and dwellings on Dalton Street.

The nearest meteorological monitoring station is the Manchester station 15.7km from the site. The prevailing wind direction at this station is southerly, and this is likely to be the same at the site, meaning receptors to the north will likely be the most affected by dust generated on site.

1) Demolition

There are 2 commercial receptors within 20m of the demolition area, with another 5 commercial receptors within 50m (**Figure 2**). The sensitivity of the local area to dust soiling effects due to demolition is judged to be medium.

Figure 2. Demolition Areas (red) with 20m (blue) and 50m (purple) Buffers



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2) Earthworks

There are approximately 15 commercial receptors within 20m of the earthworks boundary (**Figure 3**). There are approximately 10 more commercial receptors within 50m. The sensitivity of the local area to dust soiling effects due to earthworks is judged to be medium.

Figure 3. Earthworks Boundary (red) with 20m (blue) and 50m (purple) Buffers



3) Trackout

The site is classed as "large" as per the IAQM guidance. The guidance recommends assessing trackout impacts on the first 500m of public road from the site exit for large sites.

Construction traffic will likely travel along Lord Street and Cheetham Hill Road to access the ring road (**Figure 4**).

There are several apartment blocks within 20m of the trackout route including Britton House and Melia House, as well as several commercial receptors. There are further apartment blocks and commercial receptors within 50m. The sensitivity of the local area to dust soiling effects due to trackout is judged to be high.

Figure 4. Assumed Trackout Route (yellow) with 20m (blue) and 50m (purple) Buffers



3.2.2 Health Effects of PM_{10}

The receptors identified in the previous section for the effect of dust soiling are relevant here, as there are health implications for sensitive receptors due to the dispersion and deposition of PM_{10}.

The nearest PM_{10} monitor to the site is at Manchester Piccadilly. The most recent data from 2021 show the annual mean PM_{10} concentration at this monitor was 15µg/m³. The PM_{10} concentration at the site may be similar to this as it located in Manchester. This concentration is below the annual mean objective of 40µg/m³, as well as the 24µg/m³ regime defined in the IAQM guidance.

The DEFRA background PM_{10} data in **Table 2** show the concentration was 12.0-13.2µg/m³ in 2021, which is below the annual mean objective of 40µg/m³, as well as the 24µg/m³ regime defined in the IAQM guidance.

Table 2. DEFRA Background PM_{10} Concentrations (µg/m³)

Grid Square	PM_{10}	
	2021	2030
383500, 398500	12.6	12.1
384500, 398500	13.2	12.6
383500, 399500	12.0	11.5
384500, 399500	12.1	11.6

The receptors identified in *4.2.1 Dust Soiling Effects* are relevant for the health effect of PM_{10}.

1) Demolition

There are 2 commercial receptors within 20m of the demolition area, with another 5 commercial receptors within 50m. With receptors likely be exposed to no more than 15µg/m³ of PM_{10}, the health effects due to demolition are judged to be low.

2) Earthworks

There are approximately 15 commercial receptors within 20m of the earthworks boundary (**Figure 3**). There are approximately 10 more commercial receptors within 50m. With receptors likely be exposed to no more than 15µg/m³ of PM_{10}, the health effects due to earthworks are judged to be low.

3) Trackout

There are several apartment blocks within 20m of the trackout route including Britton House and Melia House, as well as several commercial receptors. There are further apartment blocks and commercial receptors within 50m. With receptors likely be exposed to no more than 15µg/m³ of PM_{10}, the health effects due to trackout are judged to be medium.

3.2.3 Ecological Effects

There are no ecological receptors within 50m of the site, nor within 50m of roads likely to be affected by trackout. Therefore, ecological effects are screened out.

3.2.4 Summary of Sensitivity to Dust Effects

Table 3 summarises the sensitivities assessed for the area. The highest sensitivities assessed are recorded within the table and will be taken forward in the assessment.

Table 3. Sensitivity of Area

Potential Impact	Sensitivity of Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	N/A	High
Human Health	Low	Low	N/A	Medium
Ecological	N/A	N/A	N/A	N/A

3.3 Overall Dust Impact Risk

The predicted dust emission magnitude (**Table 1**) has been combined with the sensitivity of the area (**Table 3**) to determine the risk of impacts during the construction phase, prior to mitigation. **Table 4** summarises the risk of dust impacts for the proposed development. The risk category identified for each construction activity has been used to determine the level of mitigation required.

Table 4. Summary of Dust Risk Impacts

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low Risk	Medium Risk	N/A	High Risk
Human Health	Negligible Risk	Low Risk	N/A	Medium Risk
Ecological	N/A	N/A	N/A	N/A

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4.0 Fuel Storage

There will be 4,000L of bunded fuel and 1,000L towable bunded bowser initially. There will also be a 10,000L bunded bowser stored on top of a plateau.

The following measures are recommended for storing fuels on site.

- Keep fuel bunded where possible, as is planned
- Keep fuel in containers which prevent pollutants escaping into the atmosphere
- Store fuel away from drainage areas so that pollutants do not escape, enter the drainage system, and potentially contaminate the water system.

5.0 Air Quality On-Site: Responsible Person

The contractor will need to nominate a "responsible person" for air quality on-site. This person will need to be adequately trained to be responsible for air quality on-site and will need suitable knowledge of pollution monitoring, control methods and vehicle emissions.

The "responsible person" will have access to the on-site monitoring information, so that they are aware of PM_{10} limit exceedances and can implement mitigation measures to resolve the issue.

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6.0 Mitigation

Table 5-8 presents IAQM mitigation measures that should be used to reduce the risk of air quality impacts from of medium risks sites.

Table 5. General Dust Mitigation Measures

Communications
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
Display the head or regional office contact information.
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site.
Site Management
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
Make the complaints log available to the local authority when asked.
Record any exceptional incidents that cause dust and/or air emissions, either on- or off site, and the action taken to resolve the situation in the logbook.
Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes.
Monitoring
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

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Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks, and construction.
Preparing and Maintaining the Site
Plan site layout so machinery and dust causing activities are located away from receptors where possible.
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.
Avoid site runoff of water or mud.
Keep site fencing, barriers and scaffolding clean using wet methods.
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
Cover, seed, or fence stockpiles to prevent wind whipping.
Operating Vehicle/Machinery and Sustainable Travel
Ensure all vehicles switch off engines when stationary - no idling vehicles.
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
Operations
Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
Use enclosed chutes and conveyors and covered skips.

Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste Management
Avoid bonfires and burning of waste materials.

Table 6. Dust Mitigation Measures Specific to Demolition

Measures Specific to Demolition
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
Avoid explosive blasting, using appropriate manual or mechanical alternatives.
Bag and remove any biological debris or damp down such material before demolition.

Table 7. Dust Mitigation Measures Specific to Earthworks

Measures Specific to Earthworks
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
Use Hessian, mulches, or trackifiers where it isn't possible to re-vegetate or cover with topsoil.
Only remove the cover in small areas during work and not all at once.

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Table 8. Dust Mitigation Measures Specific to Trackout

Measures Specific to Trackout
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
Avoid dry sweeping of large areas.
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
Record all inspections of haul routes and any subsequent action in a site logbook.
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
Access gates to be located at least 10m from receptors where possible.

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7.0 Monitoring Protocol

Dust and other pollutant emissions during site activities will be minimised if the mitigation measures in **Tables 5-8** are implemented. Monitoring helps manage the generation of dust and pollutants and can also assess whether mitigation measures are being implemented effectively. Without attention, it is possible that the emissions from the site activities could further worsen the air quality in the nearby AQMA. The following monitoring protocol is recommended for medium risk sites:

- Take into account the impact of air quality and dust on occupational exposure standards to minimise worker exposure and breaches of air quality objectives that may occur outside the site boundary, such as by visual assessment.
- Keep an accurate log of complaints from the public, and the measures taken to address any complaints, where they were required.
- Use data from a nearby weather station to determine the prevailing wind direction across the site.
  - The nearest meteorological monitoring station is the Manchester station 15.7km from the site. The prevailing wind direction at this station is southerly, and this is likely to be the same at the site, meaning receptors to the north will likely be the most affected by dust generated on site.

7.1 Monitoring Across a Line

The following for process could be used for monitoring across a line:

- Set up a line across the site according to the direction of the prevailing wind (see **Figure 4**).
- Operate a minimum of two automatic particulate monitors to measure PM_{10} levels at either end of the line, either inside or outside the site boundary. These instruments should provide data that can be downloaded in real-time by the responsible person and the local authority.
- **Figure 5** shows 2 potential monitoring locations within the site based on the prevailing wind direction and taking into account the work taking place in the area shaded blue The monitor to the south of the site will measure PM_{10} at the site which is predominantly from other sources upwind, whereas the monitor to the north will measure PM_{10} which is predominantly produced onsite. If these positions aren't practicable, similar positions that maintain a southerly line transect would be suitable, so long as they are placed away from the work area to the south.

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Figure 5. Potential monitoring locations



7.2 Monitoring at Sensitive Receptors

The following process could be used for monitoring at sensitive receptors:

- Identify which location(s) need to be monitored and set up an automatic particulate monitor at each of these to measure representative PM_{10} levels. These instruments should provide data that can be downloaded in real-time by the local authority.
- If required, supplement monitoring with handheld monitors to get on-the-spot readings at selected points, such as close to sensitive receptors.
- Consider also monitoring dust deposition and soiling rates as these can indicate nuisance.

7.3 Trigger Levels

You should set an hourly mean PM_{10} trigger level of 190µg/m^3 for the site. You should ensure alarms signal when this limit is being exceeded. You must stop work immediately in the event of exceedance and only restart when best practice measures are in place. You should use handheld monitors to get on-the-spot PM_{10} measurements around the site, and at sensitive receptors such as the residential to the northeast of the site. This is to ensure that the level of 190µg/m^3 is not being exceeded elsewhere.

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Registered Number: 907694 England

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RISK ASSESSMENT & METHOD STATEMENT

PROJECT DETAILS	
Project Name	Soil Removal - Manchester Victoria
Client	BAM Nuttall Ltd
Project Number	289028-1049462
Start Date	09/09/2024
Anticipated Duration	5 Shifts

REVISION LOG

No.	Principal changes	Prepared by	Date	Approved by	Approvers Signature	Date
01	Original (generic assessment to be made specific by assessor)	M. Harris	01.02.24	A. Jones	[redacted]	02.02.24

Project Specific

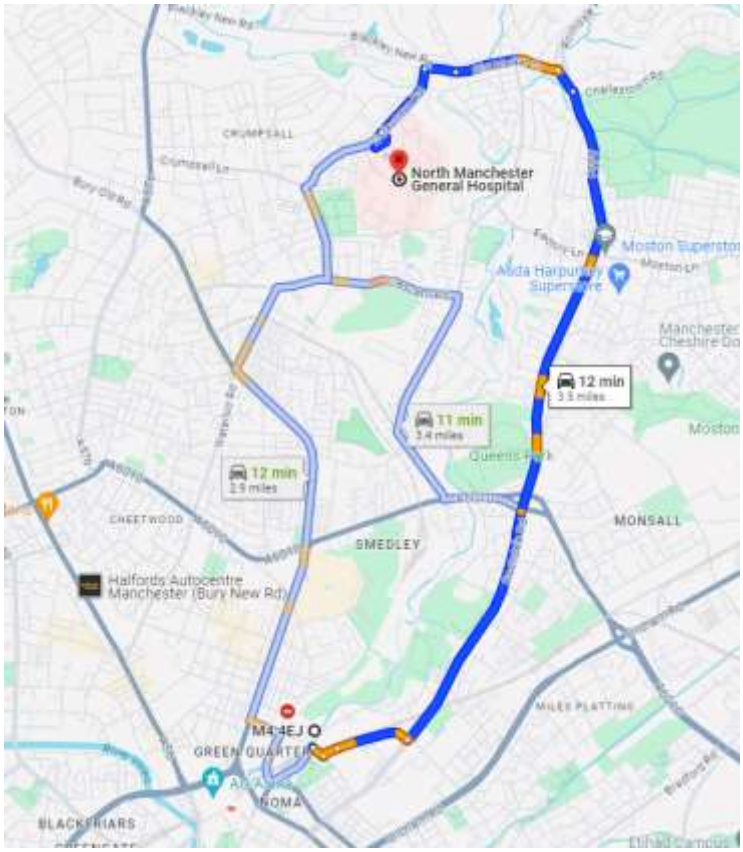
No.	Principal changes	Assessed by	Assessors Signature	Date
02	Project specific RAMS	R Pinder	[redacted]	04/09/2024

PACK CONTENTS	
Point of Work Risk Assessment	To be attached separately – ASB/RA/001
Contract Review	To be completed on form FIBR-017
Site Log	Completed in Air Monitoring app

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CLIENT / SITE DETAILS			
Client Name and Address	BAM Nuttall Ltd: St James House Knoll Road Camberley Surrey GU15 3XW		
Site Name and Address	BAM Nuttall, Site Office, Hargreaves Street, Manchester, M4 4EJ		
Client Contact Name and Details	Liam Chambers	Telephone	[redacted]
		Email	
Client Emergency / Out of Hours Contact	(if different from above)	Telephone	
		Email	
Emergency Out of Hours SOCOTEC Project Manager	**07947 897560**	**For use in instances when verbal support or guidance is needed when confronted with a scenario that cannot be resolved without higher authority**.	
SOCOTEC Incident Helpline	**01327 810666**	The core hours are 8.30am to 5.00pm Monday to Thursday, 08.30 – 4.00pm on Friday. Outside of the core hours, there is also a 24/7 service provided for emergencies only. Hazard spots and near misses should be reported via the SOCOTEC H&S Hero App.	
Regional Asbestos Offices **Scotland: 01355 255 488 North: 01283 554499 South West: 01285 700593 South East: 01708 330760**			
STOP WORK PROCESS	**STOP WORK PROCESS -** If any SOCOTEC employee believes that a task or condition will endanger either themselves or others the work should stop and escalate to their line manager and Health and Safety Manager.		
SOCOTEC Personnel	**SOCOTEC Project Manager:** Rachel Pinder 07976 590379 **Site Operatives Training / Competency Required:** Authorised surveyor holding P402 as a minimum and audited through SOCOTEC Asbestos Ltd quality system in accordance with UKAS accreditation Dominic Fitzpatrick 07485 303999 Beren Aransibia 07485 358738		
Site Times	08.30-17.00		
Site Layout and Access (parking arrangements, Site contact name)	BAM Nuttall excavation site located at Hargreaves Street, Manchester Parking available in site compound Site contact Liam Chambers 07557 256660		
Induction and Competency Card Requirements (CSCS, DBS, PTS, SSSTS etc.)	Induction required on first day CSCS SOCOTEC ID card		
Welfare Arrangements	Welfare facilities are available on site		

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ACCIDENT & EMERGENCY DEPARTMENT	
Nearest A&E department (Insert name and address of nearest A&E department along with a map showing directions)	North Manchester General Hospital, Delaunays Road, Crumpsall, Manchester M8 5RB 

PRE-START HEALTH & SAFETY REVIEW		
Who or what could be affected?	Directly – Surveyors, Survey assistants Indirectly – Building occupants Environment – Building atmosphere	
Hazardous Materials	Asbestos fibres, Acetone	
Standard Equipment	Pumps, cowls, flow meter, Hot block, Microscope, NPL and Graticule slides, Torch, Screwdriver, mirror.	
Specialist Equipment Requirements (i.e. confined space, hot working)	N/A	
Standard PPE Requirement	• Half Face or Full Face respirator, FP3 face fitted • Type 5/6 coveralls • Safety Footwear • Transit footwear	• High visibility vest • Safety glasses • Hard hat • Safety gloves cut 5 / nitrile disposable
Additional PPE Requirements	N/A	
Supporting PPE Documents	RPE001 – Mask Maintenance and Inspection Sheet, completed prior to daily use	

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SCOPE OF WORKS		Notes
SOCOTEC Objectives	To produce the project deliverables on time, while maintaining our quality, environmental and safety standards.	These may include KPI's where appropriate
General Description of the Scope of Works	SOCOTEC analyst to undertake background and personal air testing where required on contaminated land located at Manchester Victoria Main site compound and offices located on Hargreaves Street, M4 4EJ Site contact – Liam Chambers [redacted] Certs to be sent to [redacted]	Fully describe client requirements and objectives
Site lab location (power, light, suitable seating/table)	Client to provide suitable area where analyst can set up microscope	
Air sample types required (Number of tests required - leaks, personals, reassurance, clearance)	Background and reassurance air monitoring Upto 12 air tests to be run per day	
Requirements for testing the DCU.	The requirement for testing of the DCU will be agreed on site with the LARC. The site analyst will record the requirements for testing the DCU onto the Air Monitoring App and into the Contract Review Form	

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	Sequence of Tasks	Responsibility
1.	Sign in with Site Reception	SOCOTEC
2.	Complete Point of Work Risk Assessment form ASB/RA/001	SOCOTEC
3.	Establish Site Lab and complete Lab Air Test	SOCOTEC
4.	Undertake site air monitoring as outlined in internal procedures SCI/ASB/003	SOCOTEC
5.	Complete Site Diary throughout the shift	SOCOTEC
6.	Record air monitoring activities onto mobile App and issue electronic air monitoring certificate and Certificate for Reoccupation as required	SOCOTEC
7.	End	SOCOTEC
8.		
9.		
10.		

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Risk Matrix Scoring

Likelihood Severity	5: Probable	4: Likely	3: Possible	2: Unlikely	1: Rare
5: Catastrophic	25	20	15	10	5
4: Major	20	16	12	8	4
3: Moderate	15	12	9	6	3
2: Minor	10	8	6	4	2
1: Insignificant	5	4	3	2	1

KEY
High Risk – Do not proceed
Medium Risk – Seek to reduce risk, ensure all controls are implemented
Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
1.	Slips, trips, falls	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• All persons to wear safety footwear with good grip • Caution to be taken in wet / icy conditions • All spillages to be cleared immediately • Walkways and fire exit routes to remain free from obstruction • Good housekeeping, clean as you go policy • No training cables, wires • Trailing hand technique to be observed when walking down stairs (use the handrail) • Caution must be taken on sites for loose carpets etc. • Pay full attention when walking to /from site and be aware of the public • All hazards are to be reported immediately – don't walk by • Avoid walking on uneven ground where possible • Persons must avoid excavations, pits and voids • All excavations, pits and voids must have barriers where possible and be signed to prevent access • Where possible use exclusion zones where you are working, displaying appropriate signage • Adhere to site rules • Where available use pedestrianized routes	3 Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
2.	Driving	20 High risk Do not proceed	• All drivers licences are checked and monitored annually • Only persons who hold a full licence are permitted to drive any SOCOTEC vehicles • Only competent persons are permitted to drive on company business • Persons under the influence of alcohol or drugs must not operate any plant, machinery or drive any vehicle • Any persons taking medication must ensure that it will not affect their driving. They should inform their line manager if any medication they are taking states their driving may be affected • Persons must plan their journey. For journeys longer than 2 hours a rest break must be taken, persons must not drive when they are tired • Where possible the driving should be shared • For long journeys overnight accommodation is provided • Ensure that the vehicle you are driving has adequate fuel, oil etc. • All SOCOTEC vehicles have valid MOT certificates and are serviced regularly • Drivers must ensure their vehicle is free from ice / snow and the screen is clear of obstructions • Drivers must report any incident immediately to SOCOTEC helpline • Any persons driving their own vehicle on company business must ensure they have a valid MOT and that the car is in a good state of repair • Any vehicles with defects must not be driven, you must report this to your line manager immediately • All drivers must adhere to the highway code and remain courteous to other road users • Any persons that receive penalty points must notify their line manager • Drivers must park in designated areas whilst on site	5 Low Risk – Proceed and monitor for changes
3.	Fire	15 High risk Do not proceed	• Trained fire marshals onsite(Provided by client) • Appropriate fire-fighting equipment • Only trained persons may attempt to tackle (small) fires if they feel able to do so • All fire exits are to remain free from obstruction • Persons will be working to the principal contractors fire evacuation plan • Do not park obstructing fire exits	5 Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
4.	Electrical	20 High risk Do not proceed	• Persons are not permitted to interfere with electrical equipment unless they are trained and deemed competent • An electrical Permit to Work must be obtained before working near services • Isolation certificates must be obtained prior to working in an area where there may be live services • Do not overload plug sockets or extension leads • If extension leads are used they must be uncoiled during use • All equipment should be operated at 110v • Any defective equipment must be isolated and removed from service until repaired • All electrical equipment is subject to maintenance and inspection, all equipment is held on the asset database • All portable equipment is PAT tested • Where possible shock proof tools / insulated tools should be used • Residual Current Devices should be used where applicable • No personal electrical equipment is permitted to be used • During sampling where skirting boards etc. are to be removed electrics must be isolated	5 Low Risk – Proceed and monitor for changes
5.	Unfamiliarity with site	8 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Persons are required to have a site induction prior to works commencing • All persons must sign in and out of site • Persons must adhere to all site rules • A dynamic risk assessment must be completed daily / per site	2 Low Risk – Proceed and monitor for changes
6.	Lighting	8 Medium Risk Seek to reduce risk, ensure all controls are implemented	• When there is poor lighting task lighting may be required • If possible park the vehicle where there is lighting • Extra caution must be taken during the hours of darkness • Use torches / head torches as required	2 Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
7.	Vehicle Movements	16 High risk Do not proceed	• High visibility clothing must be worn where there are vehicle movements • Persons must adhere to traffic management system • Always walk behind barriers and within designated pedestrianized zones • Do not distract any persons operating plant or machinery • Persons are to be extra vigilant where vehicles are present • Where required park in designated areas only • SOCOTEC staff are not to operate any plant, machinery or vehicles they have not been trained to use	4 Low Risk – Proceed and monitor for changes
8.	Manual Handling – musculoskeletal injuries	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Persons must have completed online H&S training • Safe manual handling, safe lifting limits must be observed • Where applicable lifting aids may be used • Split the loads in to lighter loads where possible • Ask for help, colleagues will help you lift heavier items • Do not lift anything that is beyond your capability • Consider the load, the task you are doing and the environment i.e. stairs / icy ground • Do not twist, stoop or over reach when manual handling • Any persons that suffer with musculoskeletal injuries i.e. back pain must inform their line manager prior to manual handling	5 Low Risk – Proceed and monitor for changes
9.	Work at Height	20 High risk Do not proceed	• Only trained competent persons are permitted to work at height – Online H&S modules to be completed prior to working at height • Where required PASMA / IPAF • Permit to work may be required • Suitable footwear must be worn • PPE must be worn including a hard hat with chin strap / high visibility clothing • Suitable work at height equipment must be selected by a competent person • Stop and report if not satisfied with access conditions • Equipment / material must be secured whilst working at height • Persons must not work close to the edge without fall protection /arrest • Where applicable fall arrest systems to be used • Persons must be trained in the use of fall arrest system	5 Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
10.	Work at Height - Falls	20 High risk Do not proceed	• Don't over reach • Ensure adequate guard rails / toe boards • Where appropriate fall arrest systems should be used – persons must be connected to anchor points • Where applicable safety harnesses are to be used and connected to a suitable anchor point • All roofs must be treated as fragile unless confirmed otherwise • Where required crawl boards may be used • Rescue plan must be in place • See specific task risk assessment for working at height • Do not overload ladders / working platforms • Do not rest ladders against fragile surfaces • Do not walk on fragile roofs / do not work close to platform edges without fall arrest	5 Low Risk – Proceed and monitor for changes
11.	First aid	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Trained first aiders on site (Provided by client) • Emergency procedures in place – SOCOTEC to follow principal contractors procedures • Fully stocked first aid kits are held in work vehicles • All accidents must be reported to site manager immediately and via SOCOTEC reporting line	3 Low Risk – Proceed and monitor for changes

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
12.	Asbestos	20 High risk Do not proceed	• Air analysts are trained and competent to undertake site works in line with the Control of Asbestos Regulations 2012 • Appropriate RPE / PPE must be worn when working with asbestos as detailed in the method statement (FFP 3 disposable mask, power-assisted full-face respirator with P3 filters, half mask with P3 filters, safety glasses, disposable coverall, safety boots, gloves, hard hat etc.) • All persons required to wear RPE must be face fit tested and clean shaven, if for religious reasons this is not possible the line manager will arrange alternative RPE • Refer to SOCOTEC procedure / policy GS-SMS -000 2.13 V6 for PPE - 4.6.1 • Respirators are cleaned after use and stored in a dedicated container to avoid contamination. Disposable RPE must be disposed of in line with CAR 2012 • The air analyst will follow decontamination process when required • Dust and debris that is suspected to be asbestos must be cleaned up using an H-Vac (BS 8520-3:2009) by the asbestos contractor. Employees are not to undertake any asbestos removal or cleaning. • Members of the public / persons in the vicinity must not be exposed to asbestos as a result of works being carried out • Any areas where asbestos works are being carried out must be isolated and signed • Safe working procedures must be followed • Suspected asbestos must not be left where it may contaminate ground or could be tampered with by the public	5 Low Risk – Proceed and monitor for changes
13.	COSHH	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Only trained competent persons are permitted to use substances hazardous to health • All substances hazardous to health are accompanied by COSHH assessments and MSDS • All chemicals will be stored and used as instructed by the COSHH assessment • Appropriate RPE / PPE must be worn – detailed in COSHH assessment	3 Low Risk – Proceed and monitor for changes
14.	Falling objects	16 High risk Do not proceed	• All tools must be secured via a tool belt or other suitable means when using access equipment • Any loose materials must be secured prior to lifting • Any persons below the working area must wear hard hats at all times • Exclusion zones must be below the working platforms / barriers in place • Working on fixed platforms tools / material must be stored at a safe distance from the edge • Safety netting may be required • Brick guards may be used on scaffolding to prevent falling objects	4 Low Risk – Proceed and monitor for changes place

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
15.	Sharp objects	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Persons must be cautious when using sharp tools such as screwdrivers • Where possible cut resistant gloves should be used • Persons must not touch any broken glass / sharp objects care must be taken if required to clean up the materials • If any hypodermic needles are discovered – contact manager / principal contractor. • Care must be taken when onsite – safety footwear must be worn at all times	4 Low Risk – Proceed and monitor for changes
16.	Noise	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Suitable hearing protection is supplied for all staff • Staff should be trained in risks of noise exposure • All tools / machinery are subject to planned maintenance • Task rotation should be in place to reduce exposure to noise • Staff are subject to occupational health assessments to monitor hearing	3 Low Risk – Proceed and monitor for changes
17.	Biohazards	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Where possible persons must avoid any biohazard • Where working with bird droppings adequate PPE / RPE must be worn • Needles are to be disposed of within sharps bins PPE to be worn • Avoid contact with rats - pest control to be called for infestations • Extra precautions are to be taken when working around sewage or animal waste – safe working procedures to be followed • No stagnant water is to be disturbed – follow legionnaire safe working procedure	3 Low Risk – Proceed and monitor for changes
18.	Members of the public / animals – aggression, violence	12 Medium Risk Seek to reduce risk, ensure all controls are implemented	• SOCOTEC must follow procedures and policies at all time • For unauthorised persons on site SOCOTEC may politely ask to see their identification, the police may need to be called if the person is not permitted on site • Do not attempt to remove person/s from site, contact security or the police • If an SOCOTEC employee faces any aggressive behaviour from members of the public / animals they must leave site and report to their line manager immediately, they may have to contact the police • If a person is the victim of road rage, staff must remain in their vehicle with the doors locked and contact the police • SOCOTEC staff must be non-confrontational and remain polite at all times • Where dogs are present SOCOTEC may ask for the dog to be temporarily removed from the working area • If a person feels that an animal may attack them they must leave site	3 Medium Risk Unlikely to occur due to the control measures in place

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General Activity Assessment				
	Hazards	**Initial Risk (High/Med/Low**	**Control Measures**	**Residual Risk (High/Med/Low)**
19.	DSE / VDU – musculoskeletal , eye pain	9 Medium Risk Seek to reduce risk, ensure all controls are implemented	• All DSE / VDU users must complete online H&S modules • All DSE / VDU users are advised to have regular eye sight tests • Any DSE user who experiences discomfort should adjust their work station in line with SOCOTEC and HSE guidance http://www.hse.gov.uk/pubns/ck1.pdf • Any persons who suffer with discomfort should seek advice from their doctor and inform their line manager • Health and Safety will carry out a DSE assessment for those who experience discomfort after seeking advice from their doctor	3 Low Risk – Proceed and monitor for changes
20.	Adverse Weather	9 Medium Risk Seek to reduce risk, ensure all controls are implemented	• All persons must adhere to SOCOTEC adverse weather policy, procedures and advice given in safety bulletins • Persons must assess the risk of driving / working in adverse weather conditions if they feel they are at risk they must contact their line manager before proceeding • Persons must ensure they wear adequate PPE / clothing for the task they will carry out in adverse weather • Persons must ensure their vehicle is in a good state of repair, MOT, serviced	3 Low Risk – Proceed and monitor for changes
21.	Working on Contaminated Land sites	9 Medium Risk Seek to reduce risk, ensure all controls are implemented	• Avoid skin contact with suspected contaminated material • Follow correct sampling procedure to limit exposure. PPE - nitrile gloves and disposable overalls to be worn. • Avoid spilling soil. Clean up area if sample spilled with site spill kit and report on SOCOTEC Incident Line	3 Low Risk – Proceed and monitor for changes in place

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Assessor Name	Rachel Pinder	**Date**	**04/09/2024**
Assessor Role	Project Manager	**Signature**	[redacted]

Site Specific Hazards – Site specific hazards not identified in the General Activity Assessment above are to be assessed and recorded onto the dynamic Point of Work ASB/RA/001 Risk Assessment form
Confirmation that the controls have been implemented by the surveyor and assistant surveyors prior to starting site survey is recorded via completion of the Risk Assessment App on surveyors phone

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VICTORIA NORTH
INFRASTRUCTURE WORK

ASBESTOS MANAGEMENT PLAN

Job Number: LKC 22 1587
Date: February 2023
Client: BAM Nuttall Ltd



INCREASING LAND VALUE

LK GROUP

LK Consult Document Verification			
Site Address	Victoria North Infrastructure Work, off Red Bank, Cheetham Hill, Manchester, M8 8TS		
Report Title	Asbestos Management Plan		
Job Number	LKC 22 1587	**Document Ref.**	CL-602-LKC 22 1587-02
Date Issued	February 2023	**Report Version**	R0
Prepared By	Catherine Baranek	**Reviewed By**	Paul Quimby

Revision Record			
Revision No.	**Date**	**Nature of Revision**	**Approved By**

DISCLAIMER

This report has been prepared by LK Consult (LKC) who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant, experienced in preparing reports of a similar scope.

However, to the extent that the report is based or relies upon information contained in records, reports or other materials provided to LKC, which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is issued on the condition that LKC will not be held liable for any loss arising from ground conditions between sampling points (i.e. boreholes/trial pits/hand augers/surface samples) which have not been shown by the sampling points or related testing carried out during the investigation, nor for any loss arising from conditions below the maximum depth of the investigation. Opinions on such conditions, where given, are for general guidance only.

This report is prepared solely for the benefit of BAM Nuttall Ltd. It may not be relied upon by, or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full.

Those using this information in subsequent assessments or evaluations do so at their own risk.

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APPENDICES

Appendix A: Current and Proposed Development Plans
Appendix B: Site Investigation Plans
Appendix C: JIWG Output Sheets
Appendix D: Typical Methodology for Reassurance Air Monitoring & HSE Information Sheet

1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by BAM Nuttall Ltd (BAM) to produce a Asbestos Management Plan for Victoria North Infrastructure Work. The infrastructure works are being carried out to support a subsequent residential led development being planned by a Joint Venture of Manchester City Council (MCC) and the Far East Consortium (FEC).

The work relates to planning reference 133143/VO/2022. Proposals are as detailed below:

'City Council Development for the creation of development platforms, including remediation and earthworks, and change in site levels, to allow delivery of future residential-led development at the Red Bank Neighbourhood, together with the construction of a new road and priority junction from Red Bank, new drainage infrastructure, utility and services connections and diversions, preparatory tree and shrub clearance, and demolition of certain existing structures, along with the creation of new and improved green infrastructure and landscaping including the improvements of St Catherine's Wood to form part of a City River Park, and other associated works.'

Future development is anticipated to include residential, public open space, school, retail and commercial. This development is outside the scope of current work.

This Asbestos Management Plan has been designed based on the findings of the Pre-Development Remediation Strategy produced by LKC (ref: LKC 22 1587-01 R3 1st December 2022).

1.2 Site Details

The site comprises current industrial land, derelict land and woodland. It lies to the east of Red Bank, north of Roger Street and west of Dantzic Street and the River Irk. Manchester Victoria Railway Station is located to the southwest of the site. A site plan is provided in Appendix A.

There are 3no. parcels of land associated with the Victoria North Infrastructure Works named as Red Bank Plateau, Red Bank Terrace and St. Catherine's Wood. The site boundaries and named areas are shown on Plate 1-1.

Future development within these areas will include:

- Red Bank Plateau - predominantly residential development with some local public open space.
- Red Bank Terrace - public open space.
- St Catherine's Wood - school (north) and public open space. Where possible existing vegetation will be preserved with limited areas of enhancement.

The site levels range between 45.5m AOD (former Creamline Dairies in the west) to the banks of the River Irk at 29-31m AOD. Various slopes and retaining features are present on site.



Plate 1-1: Site boundary and named areas (extract from Victoria North Infrastructure Works, Ground Investigation Interpretive Report, produced by ARUP, ref: VNIF-ARP-XX-YYY-RP-CG-0012 P03, date: 23rd Nov 2022).

1.3 Earthworks Proposals

Based on the information provided, earthworks proposals are detailed below and associated plans are provided in Appendix A.

- Removal of relic structures including the remains of the former carriage shed and a gasworks.
- Regrading existing slopes between Plots RB02 and RB03 and the River Irk.
- Lowering ground levels in Plots RB02 and RB03.
- Filling activities across Red Bank Plateau to produce the required development platform.
- Regrading existing slopes in Red Bank Terrace to facilitate a series of new accessible footpaths.
- Regrading existing slopes in St Catherine's Wood to facilitate a series of new accessible footpath.
- Limited import of fill materials in Red Bank Terrace and St Catherine's Wood to supplement the regrading operations and achieve the required landform.

A cut and fill plan is provided in Plate 1-2 (further detailed plans provided in Appendix A).

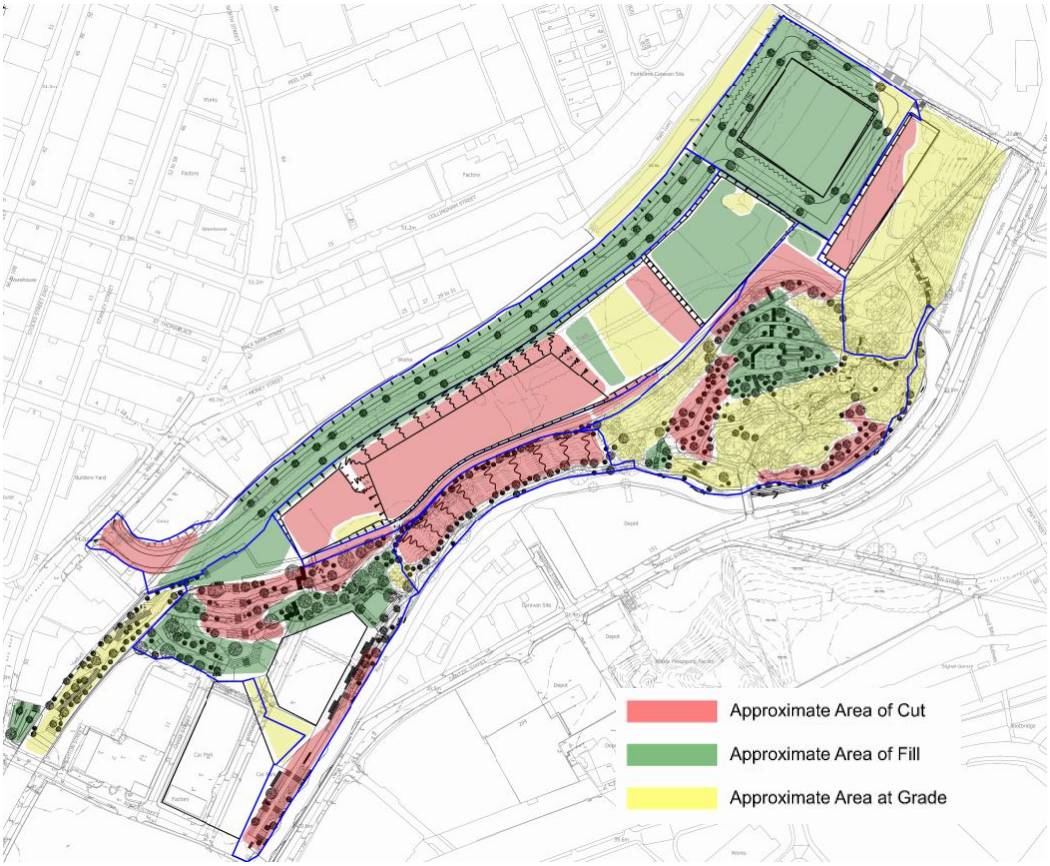


Plate 1-2: Summary of proposed cut, fill and grading (extract from Victoria North HIF Infrastructure Works, Controlled Waters Detailed Quantitative Risk Assessment Report, produced by ARUP, ref: VNIF-ARP-ZZ-YYY-RP-CG-0011, P04, date: 24th November 2022 (Cut and Fill Proposals Drawing 8)).

Details of the cut and fill are provided in Table 1-3.

Area	Approx. Cut (m^3)	Approx Fill (m^3)	Balance (m^3)
Active Travel Route (between Red Bank Plateau and St Catherine's Wood)	2,568.4	5.5	2,562.9
Plateau Avenue / RB05a	1,825.1	2,826.7	-1,001.6
Plateau Avenue	1,632.8	7,081.4	-5,448.6
RB01	817.1	91.8	725.3
RB02	6,014.6	158.7	5,855.9
RB03	9,467.0	129.5	9,337.5
RB04a	469.6	341.4	128.2
RB05b	853.8	36.6	817.1
RB05c	109.8	1,251.0	-1,141.1
Red Bank Terrace	9,390.5	2,006.7	7,383.8
Slope Regrading (southwestern area of St Catherine's Wood)	8,786.3	153.4	8,632.9
St Catherine's Wood	6,096.3	1,747.2	4,349.1

Table 1-3: Summary of cut and fill volumes (based on Take-Off Report v5_25.05.22, provided by BAM Nuttall Ltd).

Notes:

1 The available bank cut is the cut volume between the two subject surfaces. That material to be excavated is considered to be in its in situ bank density state (its natural state prior to excavation).

2 As the bank cut is excavated (and thereby placed in a loose state), it will occupy this increased volume, which is obtained by multiplying the available bank cut by the material's hauling bulkage factor.

3 The excess (positive) or deficit (negative) volume is obtained by subtracting the compacted fill required from the available bank cut.

Additional plans regarding the cut and fill operations and construction allowances are provided in Appendix A.

1.4 Scope of the Asbestos Management Plan

Site-specific measures are set out to mitigate risks arising from working with asbestos impacted soils. They should be implemented to reduce risk of exposure to airborne asbestos fibres.

This plan has been produced with reference to the following publications:

- Control of Asbestos Regulations (CAR), 2012[1].
- Asbestos in soil and made ground: a guide to understanding and managing risks, CIRIA C733, 2014[2].
- Hazardous Waste Regulations 2016[3].
- CL:AIRE, Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance, CAR-SOIL™, 2016[4].
- Asbestos in soil and made ground good practice site guide, CIRIA C765, 2017[5].

The management plan will be implemented to reduce the risk or exposure to airborne asbestos fibres when working with asbestos impacted soils.

1.5 Review of Asbestos Data

Asbestos containing material (ACM) was identified in 15 of 113 samples. Details are provided in Table 1-4. A plan showing the locations is provided in Appendix A.

Location	Depth (mbgl)	Asbestos Type	Material Type	Quant (% w/w)	Site Area
TP105	0.3	Chrysotile	Microscopic Board Fragments	0.006	St Catherine's Wood, Former Gas Works
TP206	0.3	Chrysotile	Fibres	0.007	St Catherine's Wood, Former Gas Works
BH301	1.0	Chrysotile	Loose Fibres	0.006	St Catherine's Wood, Former Gas Works
BH315	0.5	Chrysotile	Loose Fibres	<0.001	St Catherine's Wood, Former Gas Works
TT302	0.3	Chrysotile	Cement	1.539	St Catherine's Wood, Former Gas Works
BH110	0.3	Amosite	Fibres	<0.001	RB Terrace
BH112	0.3	Amosite	Fibres	<0.001	RB Terrace
TP120	1.0	Chrysotile	Microscopic ACM Fragments	0.002	RB Terrace
WS103	1.0	Amosite	Fibres	<0.001	St Catherine's Wood
BH212A	0.6	Chrysotile	Fibres	0.005	RB Terrace
TP210	1.0	Chrysotile	Fibres	0.011	RB Plateau
WS207	1.0	Chrysotile	Fibres	0.012	RB Plateau
BH323	0.5	Chrysotile	Loose Insulation	0.004	St Catherine's Wood
OP01	0.1	Chrysotile	Loose Insulation	<0.001	RB Plateau
SoilSamp07	0.0	Chrysotile	Loose Fibres	0.011	RB Plateau

Table 1-4: Summary of asbestos identified during the investigation work.

[1] HSE No.632 "The Control of Asbestos Regulations 2012". HSE (2012).
[2] C733 "Asbestos in Soil & Made Ground: A Guide to Understanding and Managing Risks. CIRIA (2014)
[3] WM3 v1.1 "Waste Classification – 1st Edition v1.1" (May 2018).
[4] CAR SOIL Control of Asbestos Regulations 2012 "Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry Guidance" (2016).
[5] C765 "Asbestos in Soil & Made Ground Good Practice Site Guide". CIRIA (2017).

2 Risk Assessment of Asbestos Impacted Soils

2.1 Introduction

Various regulations have been published detailing the protection of workers and public from risks associated with asbestos, including:

- Construction (Design and Management) Regulations, 2015[6].
- Control of Asbestos Regulations (CAR), 2006 and subsequently revised in 2012.
- Management of Health and Safety at Work Regulations, 1999[7].
- Health and Safety at Work Act, 1974[8].

CIRIA guidance document "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks (Ref: C733, dated 2014), notes there are currently no UK Soil Guideline Values (SGVs) for safe concentrations of asbestos fibres in soils. The Hazardous Waste Regulations indicate that any waste or soil material is classified as 'Special Waste' if greater than 0.1 % w/w of asbestos is present. However, this value has not been set with any recourse to human health.

Source

Asbestos impacted soils have been identified during site investigation work as described in Section 2.2, with locations shown in Appendix B.

Pathway

The primary risk pathway from asbestos in soils is inhalation of fibres when they are released into the air. Fibre dispersal is dependent on several factors including, asbestos type, condition, soil type and soil moisture content. The risk to human health can also be dependent on receptor age and exposure levels.

Receptor

Potential receptors are discussed below:

- Site operatives and visitors during the remediation phase of works. These receptors would have the greatest exposure. However, they could be considered as lower sensitivity receptors due to age. It is assumed that there will be no disturbance of impacted soils without appropriate control measures. The risk to onsite operatives and visitors is considered to be medium without any control measures and low where control measures are appropriately implemented.
- Workers and visitors associated with the surrounding area commercial / industrial may be exposed. However, they could be considered as lower sensitivity receptors due to age. It is assumed that there will be no disturbance of impacted soils without appropriate control measures. The risk to these receptors are considered to be low.
- General members of the public may be exposed, but the exposure period is considered to be short duration and sporadic (associated with use of local amenities and passing the site). There will be no disturbance of impacted soils

[6] HSE "Construction (Design & Management) Regulations 2015" (2015).
[7] HSE "The Management of Health and Safety at Work Regulations" (1999).
[8] HSE "Health & Safety at Work Act" (1974).

without appropriate control measures so risk to this offsite receptors can be considered as low.

- The nearest residential houses to the site are approximately 40m north (Fairholme Caravan Site) and an apartment block approximately 50m southeast. These are unlikely to be significant receptors given the distance to the site. However, given the higher sensitivity of the receptor (including children) these will be considered further. There will be no disturbance of impacted soils without appropriate control measures so risk to these offsite receptors can be considered as low.

The Control of Asbestos Regulations 2012 control limit for the concentration of asbestos fibres in any localised atmosphere, measured and averaged over a continuous period of four hours is 0.1f/ml. The control limit is not a 'safe' level and work activities involving asbestos should be designed to be as far below the control limit as possible.

Work involving some lower risk asbestos-containing materials, i.e., litter picking asbestos cement products, can be carried out if a risk assessment demonstrates that the control limit will not be exceeded. Furthermore, any exposure to asbestos must be 'sporadic and of low intensity'. The control limit for this type of non-licensed work is 0.6f/ml, measured over a ten-minute period. Any work which is likely to result in exposures at or above this should only be carried out by a licensed contractor.

The UK clearance indicator (UKCI) concentration of 0.01f/ml is used for assessing whether it is safe to take down an enclosure after notifiable asbestos removal has been completed and the area thoroughly cleaned. It is recommended that this value is used as the threshold value for reassurance air monitoring (refer to Appendix D). Where the threshold is exceeded, further risk assessment, mitigation and monitoring will be required before work can go on.

2.2 Qualitative Assessment of Impacted Material

Several different types of asbestos have been identified which are likely sourced from made ground brought on to site to raise levels, former land uses (including railway land) and from the demolition of former structures. Although no visible asbestos was noted during the investigation, there may be sporadic occurrences of pieces of asbestos in localised pockets of made ground.

The potential for these pieces of ACMs to degrade and release concentrated fibres from the made ground soil matrix is considered low. The risk is low where soils are saturated by perched ground water, rain or other means, before any disturbance. AGS interim guidance[9] , based on work by Addison et al[10], notes that the addition of 10% water to soil decreases the risk of potential fibre release by a factor of between 2 and 10 percent. The moisture content of the soil sampled from site was 8-20% (and typically >10%), making fibre release unlikely. For prolonged activities, control measures to keep the soils saturated and mitigate the release of fibres may comprise low pressure hosing or misting systems.

Based on the source-pathway-receptors above, a medium risk could remain where asbestos containing materials retained on site following remedial works may be disturbed by construction workers. Construction operatives may be less likely to

[9] AGS (2013). “Site Investigation Asbestos Risk Assessment.” AGS Interim Guidance, Feb 2013, Ver 2.4.
[10] Addison et al (1988). “The Release of Dispersed Asbestos Fibres from Soils.” Institute of Occupational Medicine Report No. TM/88/14.

identify or appropriately manage the risks posed by asbestos fibre release. However, in line with the Remediation Strategy, asbestos containing materials are to be beneath clean cover systems (incorporating an appropriate break layer), plots or hardstanding.

Mitigation – Uncontrolled excavation would present a moderate risk to construction workers through inhalation of fibres and a low risk to the adjacent land users. Nevertheless, the remediation works will be managed and controlled during the works. This assessment indicates the risk posed by asbestos in made ground at the site would be low to site operatives, visitors and nearby land users with localised control measures being implemented during the remediation phase.

2.3 Quantitative Assessment of Impacted Material – Work Category Assessment

Version 2.1 (March 2017), of the Joint Industry Working Group (JIWG)/CL:AIRE Decision Support Tool (for the Categorisation of Work Activities Involving Asbestos in Soil and Construction & Demolition Materials), has been used to further assess the risk posed by asbestos impacted materials in relation to planned earthworks at the site. Classification of the probable licensing status along with risk mitigation measures including recommendations for the type of RPE, dust suppression and hygiene/decontamination are generated for each source of potential asbestos contamination.

The support tool has been run for the following scenarios, based on the findings of the site investigations:

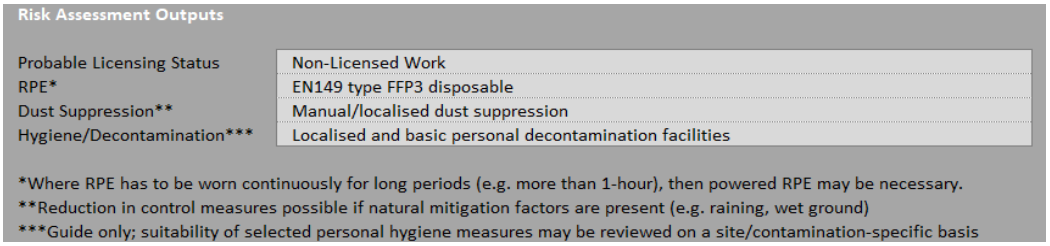
- NE Area (gasworks area) - excluding TT302:
  A higher density of asbestos was identified in this area and samples included within the assessment were generally loose fibres with a maximum of 0.011% asbestos within the soil sample.
- NE Area - TT302 only:
  This sample was treated separately as it was the only sample to comprise cement asbestos (significantly reduced risk of asbestos becoming airbourne); however, the percentage of asbestos within the material was higher at 1.539%.
- Remainder of the site (excluding gasworks area):
  Only sporadic asbestos was identified across the remainder of the site. Asbestos within the samples was recorded at <0.001 to 0.012%.
- Areas of asbestos fibres reported by laboratory analysis of soils and no visible pieces of asbestos noted.

The JIWG model Stage inputs were considered based on the site conditions and available data. In instances were no data was available, reasonable worst case conditions were assumed.

JIWG assessments have been undertaken for work categories and output sheets are provided in Appendix C. The JIWG assessments identified the following:

- NE Area (gasworks area) - excluding TT302: Medium Risk.
- NE Area - TT302 only: Low Risk.
- Remainder of the site (excluding gasworks area): Medium Risk.

The following outputs were produced (all areas):



Risk Assessment Outputs	
Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

2.4 Quantitative Assessment of Impacted Material – Receptor Risk Ranking

Version 2 of the Decision Support Tool for the Qualitative Risk Ranking of Work Activities and Receptors Involved in or Exposed to Asbestos in Soil or Construction & Demolition Materials (February 2017), was used to supplement the qualitative assessment. The hazard and risk ranking approaches are based on scoring systems presented in HSG227 and the R&D66 qualitative risk assessment methods. The tool identifies key hazard and risk factors relevant to the management of risk from exposure to asbestos contaminated soils, made ground or construction & demolition materials. The table below suggests actions to be taken based on risk to receptors using this method of assessment.

Risk Descriptor	Required Primary Action	Secondary Action
Very Low Risk	No mitigation measures required	None
Low Risk	Qualitative risk assessment and possible mitigation measures	None
Medium Risk	Qualitative risk assessment and mandatory mitigation measures	Real-time work area reassurance air monitoring
High Risk	Quantitative risk assessment and mandatory mitigation measures	Real-time work area and personal reassurance air monitoring

The JIWG model was run for the following critical receptors:

- Site Operatives Working in the Area of Disturbance.
- Workers and visitors associated with the surrounding area commercial / industrial site, working at >10m and <50m During Disturbance.
- General members of the public at >10m and <50m During Disturbance.
- Residents at >10m <50m During Disturbance.

The JIWG model also took account of the different areas of the site (NE TT302 only, NE excl TT302 and Remainder of Site). The full JIWG model parameters and outputs are included in Appendix C and summarised below.

Receptors	Distance*	Source Area	Risk Rating
Site Operatives Working in the Area of Disturbance	On site	NE TT302 only	Low
	On site	NE (excl TT302)	Medium
	On site	Remainder of the Site	Medium
Workers and visitors associated with the surrounding area commercial / industrial	>50m	NE TT302 only	Very Low
	>50m	NE (excl TT302)	Low
	>10m	Remainder of the Site	Low
General members of the public (input as public open space category)	>10m	NE TT302 only	Very Low
	>10m	NE (excl TT302)	Low
	>10m	Remainder of the Site	Low
Residential	>50m	NE TT302 only	Low
	>50m	NE (excl TT302)	Low
	>10m	Remainder of the Site	Low

*Distance from source to receptor.

The risk identified (maximum medium risk) indicate that a qualitative risk assessment and mandatory mitigation measures are required as a primary action and real-time work area reassurance air monitoring as secondary action. Special measures will not be required beyond the site boundary.

There would be an unacceptable level of risk presented by asbestos impacted soils being left at the surface of the site (following earthworks). As such remediation of impacted materials will be carried out under controlled conditions and impacted soils will be placed at a suitable depth as detailed in the Pre-Development Remediation Strategy. The risk of fibre release upon completion of the proposed earthworks will be negligible.

Validation of the remediation works will ensure there are no significant risks to future users. Build phase contractors will need to ensure appropriate mitigation measures are utilised should there be any requirement to disturb potentially impacted soils during the construction phase of works.

A medium risk could remain where asbestos containing materials retained on site following remedial works may be disturbed by construction workers. Construction operatives may be less likely to identify or appropriately manage the risks posed by asbestos fibre release.

3 Asbestos Management Plan

3.1 Summary

The following remediation is recommended associated with soil contamination:

- POS Areas – 300mm thick, clean environmental cover system.
- Proposed development areas – 100mm thick, clean environmental cover system as a temporary cover prior to a full environmental cover system once the proposed development is finalised for the site.
- Proposed hardstood areas – no remediation required.

Arrangements to manage or remove asbestos must be explained to site workers during site inductions and regular 'Toolbox Talks'. The Project Coordinator will make sure site inductions contain relevant information and are updated to reflect changes in project arrangements and asbestos risks.

3.2 Asbestos in Soils Roles

The Project Coordinator (BAM) should be responsible for ensuring the asbestos management plan is implemented. The following roles may also be required subject to ground conditions encountered during the groundworks:

- Asbestos in Soils Contractor
- Asbestos Surveyor
- Asbestos Analyst
- Licensed Asbestos Removal Contractor

3.3 Asbestos in Soils Action Required

Location	Initial Risk Category	Actions Required	New Risk Category
All Site	Low / Medium	Appropriate control measures during earthworks. Cut and fill of soils as required or disposal of surplus soils.	Very Low / Low

3.4 Asbestos Surveyors and Analysts Requirements

The Project Coordinator will check providers of surveys and analytical services have evidence of:

- Surveying personnel must hold the BOHS P402 qualification and have at least 6 months' practical experience in asbestos surveying.
- Laboratory staff analysing samples for asbestos content must hold BOHS P401 qualification or the Certificate of Competence, and the Laboratory are UKAS registered.
- Analysts undertaking air monitoring, fibre counting & four stage clearance testing must hold the BOHS P403 and P404 qualifications & have had 3 months demonstrated practical experience in this field.
- Adequate public liability insurance cover.
- Adequate professional indemnity insurance cover.
- Adequate training arrangements for its workforce.
- Health & Safety Policy.
- Methods of work and risk assessments.

3.5 Training & Communication

All operatives will be given a full site induction highlighting the risks associated with asbestos in soils.

Operatives that are required to wear non-standard PPE/RPE will be trained on how to wear it correctly and how to identify and replace worn or defective parts.

The relevant site-specific details of ACMs and asbestos impacted soils, including the arrangements made to manage or remove asbestos shall be explained to site workers during site inductions and 'Toolbox Talks'.

The Project Coordinator will make sure site inductions contain relevant information and are updated to reflect changes in project arrangements and asbestos risks.

For people working on sites where asbestos in soils is an issue, evidence of training is required as below:

Role	Training	Requirement	Role
Where the Project Coordinator deems necessary (in line with risk) training should be provided to anyone who may come into contact with ACMs or asbestos impacted soils	Asbestos awareness – Cat A	Initial session in classroom then annual refresher	Where the Project Coordinator deems necessary (in line with risk) training should be provided to anyone who may come into contact with ACMs or asbestos impacted soils
Workers who are required to remove or otherwise disturb asbestos containing materials as a part of their duties	Non licensed works – Cat B	Initial qualification followed by yearly refresher to maintain qualification	Workers who are required to remove or otherwise disturb asbestos containing materials as a part of their duties

3.6 Remediation of Impacted Materials

In dry conditions, made ground materials will be regularly damped. For prolonged activities, control measures to keep the soils saturated and mitigate the release of fibres will be implemented.

As far as reasonably practicable, any visible fragments of ACMs will be removed accordingly. Upon receipt of confirmatory chemical analysis, recycled aggregates will be reused as construction materials on site.

All excavations and work with potentially impacted materials will be supervised by an experienced brownfield remediation site manager, supervisor or and/or geo-environmental engineer. On discovery of unexpected potential ACMs works will stop, the area will be made safe and further assessment of the material will be carried out. The Project Coordinator will assess the planned work and undertake additional risk assessments if required. An updated or alternative remediation strategy may be required pending the outcome of risk assessment has been done.

3.7 Assessment of Asbestos Risk

When ACM, or soils impacted with asbestos fibres are identified, the Project Coordinator will assess the planned work, considering location and condition of the ACM and the potential of whether ACM will be disturbed or damaged.

If the planned work poses a risk of damage to, disturbance of ACMs or the release of loose fibres from the soils, the Project Coordinator shall arrange for the removal of the ACM (or asbestos impacted soils) or for appropriate control measures to be implemented.

3.8 Unknown Material

Following notification of suspect materials all work must to stop in the area and the Asbestos in Soils Consultant should be notified immediately. The Project Coordinator will arrange sampling and analysis of the suspect material by the Asbestos Consultant or Surveyor.

If found to be present, appropriate action is to be arranged by the Project Coordinator i.e., removal by a licensed or non-licensed contractor (as appropriate) or protection of the material.

3.9 Control Measures

The risk of fibre release is low where soils are saturated by perched ground water, rain or other control measures, before any disturbance. In dry conditions, soils will be regularly damped down using water to control the generation of dust. For prolonged activities, control measures to keep the soils saturated and mitigate the release of fibres may comprise low pressure hosing or misting systems. CIRIA C733 suggests the risk of release of fibres is low where soil moisture content is above 15%. It also suggests the release of fibres decreases exponentially with increased soil moisture content to almost 0% fibre release at 25% soil moisture content.

Dust will be kept to a minimum by:

- Where necessary, haul road, work areas and stockpiles will be damped down with water spray.
- The application of water to haul roads, work areas and stockpiles will be monitored by the resident engineer and/or site manager to ensure that soils are not over saturated to prevent run-off.
- Stockpiles will be sealed by compacting at the surface at regular intervals and at the end of the day.
- Where necessary, stockpiles can be sheeted.
- A site speed limit of 5mph will be imposed in dry weather to minimise dust creation.
- Where concrete that is contaminated with small volumes of asbestos is broken up by excavators, localised dust suppression will be undertaken.
- Where off-site disposal of asbestos impacted soils is required, only sheeted road wagons will be used to transport soils. If necessary, soils will be damped down during loading.
- Excavations will be managed to minimise the area of contaminated soils exposed at any one time.

Levels of dust will be assessed throughout the works. In the event of dust, damping down and/or covering stockpiles will be undertaken. Monitoring will be carried out at a minimum of four points around the site boundary three times per day. For each round of monitoring the engineer/site manager will keep a record of the activities being undertaken on site and meteorological conditions in the Daily Site Records. A record of wind speed (Calm, Moderate or Strong) wind direction and precipitation will be

made. If dust is noticed, the engineer/site manager will immediately stop the process causing dust and implement further control measures before work commences.

A hose, bowser, mobile power washer or similar can be used, for damping down of soils. This equipment can also be used to damp down stockpiles where required. If, during excavation and/or placement of soils, this method of damping down is ineffective, consideration should be given to the use of a specialist trailer mounted water misting system.

For low risk non-licenced activities, excavators used to excavate asbestos impacted soils must have an enclosed cabin for the operator. The operator must remain in the cab while working in impacted areas with reverse cycle air conditioning running and all windows and doors closed. Decontamination of the machine must be carried out at the end of the work as detailed in HSE EM7.

Appropriate PPE and RPE should be utilised where risk assessments identify higher risks or for notifiable work, full PPE and RPE must be used by the operator as well as operatives in working in the area. This will be determined by the outcome of Joint Industry Working Group (JIWG)/CL:AIRE Decision Support Tool outputs for each site and scenario, included in Appendix C. In this case medium risk have been identified therefore appropriate PPE and RPE should be utilised (see Section 3.10).

Reassurance air testing carried out on recent projects where remediation of similar or higher risk materials were encountered has demonstrated that damping down of soils is an extremely effective control measure. Further inspection of any unexpected potentially impacted soils will be carried out by a suitably qualified (P402) Asbestos Surveyor before any movement of those materials will be allowed.

Should background levels be recorded prior to the commencement of remediation of impacted soils, or if required upon the further inspection by the P402 Asbestos Surveyor, reassurance air testing in accordance with HSG 248 will be carried out. A typical methodology that will be used for selecting the frequency and duration of reassurance air testing is presented in **Error! Reference source not found.**.

If deemed necessary, reassurance air monitoring will be carried out on site to establish background concentrations of asbestos fibres in the air. Additional real-time air monitoring will be carried out during any significant disturbance of impacted materials. Air monitoring is not considered necessary for short duration (<1 hour one for any one person in a week), low intensity work such as sampling where no or minimal disturbance and/or deterioration is expected.

Background air monitoring of airborne respirable fibres must not exceed the UK clearance indicator concentration of 0.01 f/ml (used for assessing whether it is safe to take down an enclosure after notifiable asbestos removal has been completed and the area thoroughly cleaned). If the air clearance threshold is exceeded all excavations and disturbance in the impacted area must stop. Fibre release will be minimised once disturbance has ceased. However, dust suppression and air monitoring will be maintained, and the Asbestos Consultant and/or Surveyor will carry out a situation specific risk assessment. The risk assessment will determine the work category and RPE/PPE requirements. Additional control measures may be required at this point (such as additional dust suppression, additional suppression additives or enclosures).

There is currently a low to moderate risk for the release of asbestos fibres from made ground at the site. The prevalence of damp conditions and the fact potentially impacted

soil will not be disturbed unless it is saturated, the risk is expected to be reduced to a low risk. As a precaution, air monitoring is recommended during the excavation and disturbance around the former gas works area where a moderate risk was identified. Air monitoring is not anticipated to be required across the remainder of the site.

If notifiable licenced asbestos removal works are required (due to unexpected asbestos being encountered), a specialist contractor will be utilised to manage and complete these works.

3.10 Personal Protective Equipment (PPE), Hygiene and Decontamination

In addition to standard PPE, where the Work Category Risk Assessment requires it, operatives working directly in areas where asbestos impacted soils are to be disturbed (0m to 10m) will be equipped with the following PPE:

- Disposable oversize overalls (Type 5 BS EN ISO 13982-1), to prevent ripping at the seams.
- Tape to seal loose cuffs.
- Avoid wearing a long-sleeved shirt - these are difficult to cover properly.
- Wear the overall legs over footwear – tucking them in allows dust into footwear.
- Wear the hood over the RPE straps.
- Disposable work gloves.
- Respiratory Protective Equipment (RPE) with an Assigned Protection Factor of 20 or more.
- One of these suitable types of RPE:
  - Disposable respirator to standards EN149 (type FFP3) or EN1827 (type FMP3).
  - Half mask respirator (to standard EN140) with FFP3 filter (if specified by the Decision Tool).

Operatives that are required to wear RPE will be trained on the limitations of the RPE, how to wear it correctly and how to identify and replace worn or defective parts.

Failure to correctly use PPE/RPE will result in immediate cessation of works. Works will not be permitted to recommence until the individual has undergone further training in the use of PPE or the individual removed from works area.

Where the Work Category Risk Assessment requires it, localised and basic personal decontamination facilities will be provided for plant and operatives working in areas of asbestos impacted soils (0m to 10m). At the end of each shift the excavator and its attachments will be washed down before leaving the impacted area. Any rags used to clean the equipment will be placed into double sealed asbestos waste bags before being placed in the lockable sealed skip for disposal to a suitably licenced landfill facility. Worn PPE/RPE will be double bagged (red asbestos waste bags), sealed and placed in a lockable sealed skip for disposal to a suitably licenced landfill facility. Washing facilities for site operatives will be provided. The suitability of selected personal hygiene measures may be reviewed on a contamination-specific basis. Decontamination will be carried out in accordance with the HSE information sheet EM8, included in **Error! Reference source not found.**.

3.11 Asbestos Surveyors and Analysts

The Project Coordinator will check providers of surveys and analytical services have:

- Surveying staff – BOHS P402 qualification and 6 months' practical experience in asbestos surveying.
- Laboratory staff – BOHS P401 qualification/Certificate of Competence, Lab – UKAS.
- Air Monitoring Analysts – BOHS P403 and P404 qualifications and 3 months experience in the field.
- Adequate public liability and professional indemnity insurance cover.
- Adequate training arrangements for its workforce.
- Health & Safety Policy, methods of work and risk assessments.

3.12 Asbestos Impacted Soils – Non-Licenced Work

Visible fragments of ACMs were not identified during the site investigation, but there remains potential that regions of ACM made ground have not been identified.

For all people working on sites where asbestos in soils is an issue, evidence of training is required as below:

Role	Training	Requirement
Where the Project Coordinator deems necessary (in line with risk) training should be provided to anyone who may encounter ACMs or asbestos impacted soils	Asbestos awareness – Cat A	Initial session in classroom then annual refresher
Workers who are required to remove or otherwise disturb asbestos containing materials as a part of their duties	Non-licensed works – Cat B	Initial qualification followed by yearly refresher to maintain qualification

All excavations and work with potentially impacted soils will be supervised by an experienced brownfield remediation Site Manager, Site Supervisor or Geoenvironmental Consultant. On discovery of other potential ACMs works will stop, the area will be made safe for further assessment of the material.

3.13 Waste from Non-Licensed Asbestos Removal Work

Waste arising from non-licensed asbestos removal works shall be packaged in accordance with HSE's Asbestos Essentials Task Manual (HSG210), Equipment & Method Sheet EM9. All asbestos waste must double wrapped or double bagged in plastic, with the correct hazard warning label/sign.

If asbestos waste is to be transported within a vehicle for onward disposal, it must be carried within a segregated compartment that is easily cleanable and lockable. All asbestos waste must be accompanied by a completed Hazardous Waste Consignment Note prior to being transported.

Where asbestos waste is stored at a depot prior to disposal, the waste shall be stored within a covered lockable container that is in a secure area, labelled as asbestos waste.

3.14 Licensed Asbestos Removal Contractors (LARCS)

A Licensed Asbestos Removal Contractor will be appointed to deal with any high risk, notifiable asbestos materials, if encountered.

The removal of licensed materials as designated by the Health and Safety Executive (HSE) will be carried out by an HSE licensed removal contractor. All licenced contractors will be required to show evidence of:

- A valid HSE issued license to carry out such works.
- All relevant insurance for this type of work.
- Proof of training and health monitoring of all operatives employed by the removal contractor during the removal project on this organisation's site/sites.
- Membership to a recognised trade organisation.

A LARC will deal with notifiable ACMs including Asbestos Insulation Board (AIB), asbestos pipe lagging, asbestos sprayed laggings or coatings etc. Prior to starting works LARCS must provide evidence of:

- A current HSE licence to undertake asbestos removal work.
- Adequate public liability insurance cover.
- Adequate training arrangements for its workforce.
- Health & Safety policy.

3.15 Waste from Licensed Asbestos Removal Work

Where necessary, the LARC's Plan of Work will include the agreed waste disposal arrangements.

Asbestos impacted soils with an asbestos content greater that 0.1% by weight that cannot be retained on site will be disposed of as hazardous waste in accordance with the Hazardous Waste Regulations 2016.

All disposed waste will be recorded by volume and content. Transfer notes must be retained in the site records.

3.16 Monitoring

To ensure non-licensed and licenced (if required) asbestos work are being carried out in accordance with the approved plan, the Project Coordinator will inspect the works daily. The content of this plan and the implementation of the plan's arrangements will be updated when necessary.

3.17 Emergency Plan

Site-specific arrangements for emergencies and the arrangements for decontamination:

- On discovery of other potential ACMs works will stop, the area will be made safe and further assessment of the material will be carried out by a suitably qualified asbestos surveyor.
- In case of emergency stop all work immediately inform all others to vacate the area immediately and report to the Project Coordinator.
- Dust control measures should be in place for dealing with known asbestos impacted soils. Providing appropriately trained personnel are available with the correct types of PPE, control measures should be implemented to minimise the risk of the release of fibres.

- Following notification of suspect materials all work must to stop in the area and the Asbestos in Soils Consultant should be notified immediately. The Project Coordinator will arrange sampling and analysis of the suspect material by the Asbestos Consultant or Surveyor.

If found to be present, appropriate action is to be arranged by the Project Coordinator i.e., removal by a licensed or non-licensed contractor (as appropriate) or remediation of the material.

3.18 Review

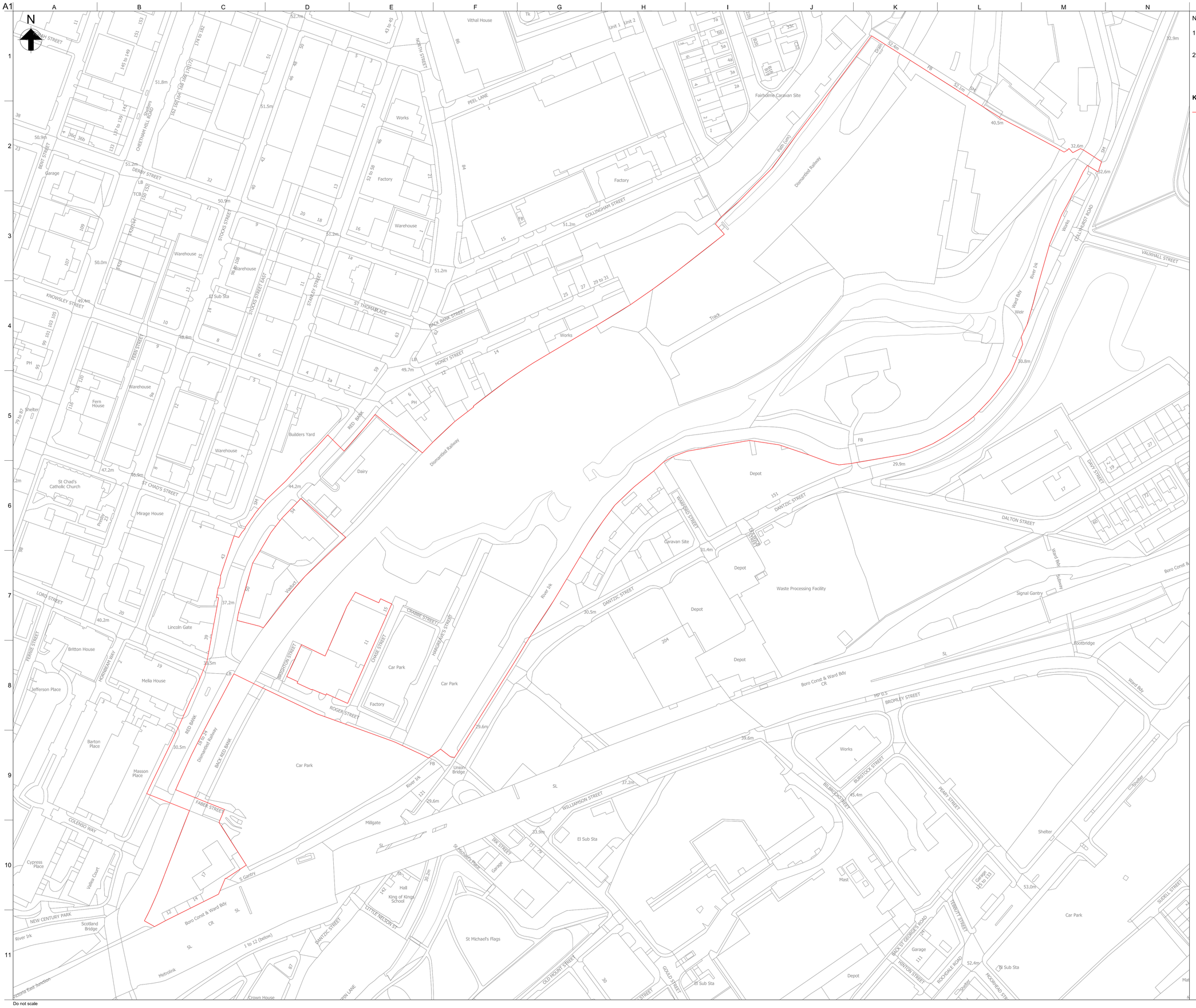
The AMP will be updated upon the discovery of ACMs outside the scope of the original asbestos surveys.

Reviews will be undertaken where there is a change in personnel or a change to the works being undertaken. A record of each review must be made and retained on site. Following the review, records must be updated.

Appendix A

Development Plans

A1



Rev	Date	Description	By	Chkd	Appd	Auth
P01	09/11/21		EC	EC	ME	—
P02	09/11/21	For Enabling Works Application	EC	EC	ME	—
P03	16/11/21	Updated redline boundary	EC	EC	ME	—
P04	10/12/21		RG	RG	RG	—
P05	04/02/22	For Information	RG	RG	RG	—
P06	11/03/22		EC	EC	RG	—

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

Location Plan

Scale at A1	1:1250	Arup Job No	282022-00
Role	GIS & Land Surveyors		
Suitability	S3 - Issued for Review and Comment		

Rev	By	Chkd	Appd	
P06	EC	EC	RG	—
	Date 11/03/22	Date 11/03/22	Date 11/03/22	—

Name

VNIF	- ARP -	00	- YYY -	DR	- G	- 0009
Project	Originator	Volume	Location	Type	Role	Number

Do not scale

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A1

KEY

SITE BOUNDARY

PROPOSED HARDWORKS
Refer to detail drawings VNIF-PLA-ZZ-YYY-DR-L-5000-5002 for more information.

S1 CLAY PAVING - Pedestrian grade
Product: Neland Clay Paving by Hardscape (OSA)
Colour /Finish: 50% Bronx Waterstruck
50% Sienna (sanded)
Size: 200mm(l) x 50mm(w) x 85mm(d)
Laid: stretcher/herringbone bond as shown (TBC)

S1.1 CLAY PAVING - Vehicular grade
Product: Neland Clay Paving by Hardscape (OSA)
Colour /Finish: 50% Bronx Waterstruck
50% Sienna (sanded)
Size: 200mm(l) x 50mm(w) x 85mm(d)
Laid: stretcher/herringbone bond (TBC)

HRA SURFACING (Vehicular)
Location: to vehicular carriageway on Plateau Avenue
Material: HRA to Arup details and specification. Refer to Arup drawings

HRA SURFACING (Temporary Carriageway)
Location: to vehicular carriageway on Plateau Avenue
Material: HRA to Arup details and specification,. Surface Course not to be installed for temporary carriageway. Refer to Arup drawings

PERMEABLE SURFACING (Parking/Loading Bays)
Location: to parking and loading bays on Plateau Avenue
Material: Permeable block paving, Surface Course not to be installed for temporary carriageway. Refer to Arup drawings

ASPHALT SURFACE (Pedestrian)
Location: to pedestrian routes on Plateau Avenue
Material: Asphalt Surfacing, Surface Course not to be installed for temporary footway. Refer to Arup drawings

S3 GRANITE SETTS
Location: to St Catherine's Wood entrance area, Union Waterfront & Red Bank Terrace
Material: European granite natural stone setts
Colour/finish: 40% Rose Santa Eulalia (fine picked), 30% Amarelo montemuro (flamed), 30% Rosa Forte (flamed)
Cropped sides, sawn bottoms.
Laid: stretcher bond, with single course of setts to perimeter edges.

S3.1 GRANITE SETTS
Location: to St Catherine's Wood entrance area, Union Waterfront & Red Bank Terrace
Material: European granite natural stone setts
Colour/finish: 40% Rose Santa Eulalia (fine picked), 30% Amarelo montemuro (flamed), 30% Rosa Forte (flamed)
Cropped sides, sawn bottoms.
Laid: Rigid, Stretcher Bond. 14mm Jointing

S4 RESIN BOUND GRAVEL SURFACING
Location: Site wide
Product: Sureset Resin Bound Surfacing System (permeable)
Finish/Colour: 6mm Winter Bronze or similar and approved
40mm thick open graded asphalt concrete binder course (50mm depth) to Arup details and specification. Refer to detail drawing VNIF-PLA-ZZ-YYY-DR-L-5000 for more information.

S5 GREEN GAP PAVING
Product: Neland Clay Pavers by Hardscape (OSA)
Grass infill to joints
Colour /Finish: 50% Bronx Waterstruck
50% Sienna (sanded)
Size: 200 (l) x 50 (w) x 85 (d)mm
Laid: linear bands with 30mm gaps for planting/grass

S6 STEEL GRATING DECKS
Location: Red Bank Terraces, St Catherine's Wood
Material: Galvanised steel structural frame with galvanised steel deck infill.
System to be developed with Weland AB (OSA)
To meet required slip resistance standards
Finish: Corten frame, galvanised steel deck/grating

S7 STEEL GRATING STEPS
Location: to Red Bank Terraces, St Catherine's Wood
Material: Galvanised steel structural frame with galvanised steel deck infill.
System to be developed with Weland AB (OSA)
To meet required slip resistance standards
Finish: Corten frame, galvanised steel deck/grating

TACTILE HAZARD WARNING STRIPS
Location: Red Bank Terraces and St Catherine's Wood wherever there are steel grating steps
Material: Tactile strips mechanically fixed to metal decking or root fixed into groundplane

S7 COMPOSITE TIMBER DECKING
Location: to elevated walkway/cycle route in St. Catherine's Wood and Union Waterfront deck
Corten steel structural frame with composite deck surfacing
Supplier/Product: Lasta-Grip composite decking by Millboard (OSA)
Colour: Coppered Oak
Finish: to meet required slip resistance

S8 PRE-CAST CONCRETE STEPS
Location: to Union Bridge Waterfront and Red Bank Terraces
Material: Pre cast concrete with stone aggregate
Product: Mix design ref BLSC135
Supplier: Evans Concrete Products Ltd (OSA)
Colour: buff/natural tone
Finish: combination of light/medium/heavy acid etched finishes with contrasting nosings

S8.1 PRE-CAST CONCRETE SEATING STEPS
Location: to Union Bridge Waterfront and lower Red Bank Terraces
Material: Pre cast concrete with stone aggregate
Product: Mix design ref BLSC135
Supplier: Evans Concrete Products Ltd (OSA)
Colour: buff/natural tone
Finish: combination of light/medium/heavy acid etched finishes

S8.2 TACTILE CORDUROY HAZARD PAVING
Location: Red Bank Terraces and Union Waterfront wherever there are steps
Material: Granite
Colour: Dark Grey
Size: 400mm (l) x 400mm (w) x 50mm (d)
Finish: flamed
Laid: Rigid, stack bond

S8.3 IN-SITU CONCRETE STEPS
Location: Eastern run of steps
Material: Concrete, fair faced finish
Colour: Natural/grey
Notes: To have contrasting aluminium nosings mechanically fixed

S9 TACTILE BLISTER HAZARD PAVING
Location: road crossings
Material: pre-cast concrete
Colour: Natural
Size: 400mm (l) x 400mm (w) x 50mm (d)
Finish: as cast
Laid: Rigid, stack bond

S11 BARK CHIPPINGS
Location: to secondary pedestrian paths in St. Catherine's Wood
Material: Bark chippings, opportunity to use chipped site won timber from tree clearance

S11.1 TIMBER SLEEPER STEPS ALONG BARK PATH
Location: to informal tertiary routes within St Catherine's Wood
Material: Larch FSC timber sleepers
Colour: natural
To have GRP Anti-Slip flat plate strips by GripClad (OSA) to be mecahnically fixed to the sleeper tops.

S12 RUBBER BARK LOOK CHIPPINGS
Location: to St. Catherine's Wood Play Area
Material: Tiger Bark or similar and approved
Colour: Earth Tone 1

STEPPING STONE PATH
Location: to St Catherine's Wood tertiary routes
Material: European granite natural stone slabs
Colour: buff/natural tones TBC
Size: 800mm(L) x 400mm(W) x 75mm(D)
Finish: Picked surface, cropped sides
Laid: on concrete haunchings

S14 TEMPORARY TARMACADAM SURFACING
Location: to provide link between Union Waterfront and Red Bank Terraces
Material: Asphalt to engineers details and specification.
Note: to be replaced by future landscaping

S15 COLOURED ASPHALT SURFACING
Location: to ridge promenade at Plateau level and cyclist loop on Red Bank Terraces
Material: Buff Ulticolour by Tarmac or similar and approved.

S16 TIMBER SLEEPERS IN SELF BINDING GRAVEL
Location: to Red Bank Viaduct
Self Binding: Breedon Golden Amber Gravel or similar and approved.

PROPOSED SUBSTATION

PLOT FOOTPRINT
Plot groundworks prepared but no construction work as part of HIF infrastructure.

EXISTING CONDITION
No groundworks or preparation as part of HIF infrastructure work.

PROPOSED SOFTWORKS

PROPOSED TREE PLANTING
Subject to further detailed design

EXISTING TREES RETAINED
Subject to further detailed design

EX1 EXISTING WOODLAND RETAINED
To St. Catherine's Wood

EXISTING WOODLAND ENHANCED

M1 To St. Catherine's Wood
Refer to drawing for notes
Approx area: 12215m²

M2 WOODLAND MATRIX MIX
To St. Catherine's Wood
Refer to drawing for notes
Approx area: 5900m²

M3 WOODLAND EDGE MIX
To St. Catherine's Wood
Refer to drawing for notes
Approx area: 1265m²

M4 ORNAMENTAL PLANTING
To Red Bank Terraces
Refer to drawing for notes
Approx area: 3155m²

M5 ORNAMENTAL PLANTING
To Viaduct Linear Park
Refer to drawing for notes
Approx area: 1412m²

M6 AQUATIC MARGINAL VEGETATION
To Rivers Edge
Refer to drawing for notes
Approx area: 2690m²

HEDGE PLANTING
Mixed native species hedgerow mix to northern boundary
Approx area: 73m², Approx length: 50m

RB01 RB02 RB03 RB04 RB05a RB05b RB05c RB06 RB07 RB08 RB09 RB11 RB12a RB12b RB16 RB17 NT01 NT02 NT03 NT04

HAZ-SW-005 HAZ-SE-001 HAZ-ST-005 HAZ-ST-006 HAZ-ST-012 HAZ-ST-013 HAZ-SW-001 HAZ-SW-002 HAZ-SW-003 HAZ-SW-004 HAZ-SW-005 HAZ-SW-006 HAZ-SW-011 HAZ-SW-012 HAZ-SW-013 HAZ-GE-001 HAZ-GE-004 HAZ-LA-007

Works to river and river banks in abeyance - subject to further review and coordination with Arup rivers team

Scale bar (m) 0 10 20 50 100

Do not scale

NOTE: Future Plot Extents are Indicative Only

Rev	Date	Description	By	Chkd	Appd	Auth
P07	16.09.22	Stage 4 issue - drawing pack amends	BM	MS	GB	GB
P06	04.08.22	Stage 4 issue - refer to revision notes	BM	MS	GB	GB
P05	19.07.22	Stage 4 issue - PF to review	BM	MS	GB	GB
P04	13.06.22	Stage 4 Issue	BM/SR	MS	GB	GB
P03.03	25.05.22	Interim GA Issue - for coordination	BM/SR	MS	GB	GB
P03.02	03.05.22	Interim GA Issue for costing	BM/SR	MS	GB	GB
P03.01	22.04.22	Interim GA Issue - for coordination/costing	BM/SR	MS	GB	GB
P03	07.03.22	Costing	BM	MS	GB	GB
P02.08	02.03.22	Final Draft Planning	CL	MS	GB	GB
P02.07	14.02.22	Draft Planning	CL	MS	GB	GB
P02.06	14.02.22	Draft Planning	BM	MS	GB	GB
P02	11.02.22	Draft Planning	BM	MS	GB	GB
P02.05	04.02.22	Draft Planning	BM	MS	GB	GB
P02.04	31.01.22	Draft Planning	SR	MS	GB	GB
P02.03	27.01.22	Draft Planning	BM	MS	GB	GB
P02.02	27.01.22	Draft Planning	BM	MS	GB	GB
P02.01	25.01.22	Draft Planning Issue	BM	MS	GB	GB
P01	17.12.21	Stage 3 Issue	SR	MS	GB	GB
P01.02	10.12.21	For Information	SR	MS	GB	GB
P01.01	07.12.21	For Information	SR	MS	GB	GB

Safety, Health and Environmental Information

Notes below are additional to hazards/risks normally associated with this type of work. Numbers correspond to Risk Register references (document reference VNIF-ARP-ZZ-YYY-RE-WD-0002)

Construction

- HAZ-GE-001 Excavation near slopes
- HAZ-GE-004 Ground contamination
- HAZ-LA-007 Condition of existing trees
- HAZ-SE-001 Slips, trips, falls down embankment
- HAZ-ST-005 Potential instability of Creamline Dairies retaining wall
- HAZ-ST-006 Working near existing structures
- HAZ-ST-012 Buried Structures
- HAZ-ST-013 Lifting of heavy elements
- HAZ-SW-001 Working adjacent to live traffic
- HAZ-SW-002 Buried existing services
- HAZ-SW-003 Working adjacent to live water course
- HAZ-SW-004 Deep excavations
- HAZ-SW-005 Working on or adjacent to historic structures
- HAZ-SW-006 Asbestos - operatives in contact with asbestos materials
- HAZ-SW-011 Contact with hazardous plants / vegetation
- HAZ-SW-012 Risk of water borne diseases
- HAZ-SW-013 Human debris / drug paraphernalia

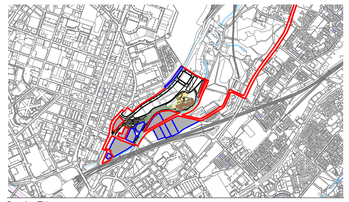
p·ie

Client

Project Title

Victoria North HIF Infrastructure

Key Plan



Drawing Title

Landscape General Arrangement
HIF Delivery Plan

Scale at A1	Planit-IE Job No
1:1000	2700

Role: Landscape Architect

Suitability: S3

Rev	By	Chkd	Appd
P07	SR	MS	MS
	Date	Date	Date
	16.09.22	16.09.22	16.09.22

Name

Project	Originator	Volume	Location	Type	Role	Number
VNIF	PLA	ZZ	YYY	DR	L	1011

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Notes:

Rev:	Date:	Revisions
C	25/5/22	Model Updated over steps / Ramps. Soil Depth Revised
B	12/4/22	Initial length of road increased to deeper construction as remainder
A	8/3/22	Updated to reflect revised arrangement and construction details

Scale : 1:1000

Date : 16/02/2022

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BAM Nuttall
Victoria North
Initial Construction Allowances

Rev: A B C

Drawing No: MCL/BAM2201/002

Original Drawing Size: 841x1189 (A0)



Notes:

Depths of Cut / Fill indicated are calculated from a commencement surface of OGL, to the formation model (refer to dwg MCL/BAM2201/002 Rev C)

Mass Earthworks Analysis

Volumes per Area of Interest (m³)

Area of Interest	Available Bank Cut (1)	Compacted Fill Required (2)	Excess/Deficit (3)
Active Travel Route	2,568.4	5.5	2,562.9
Plateau Ave / RB05a	1,825.1	2,826.7	-1,001.6
Plateau Avenue	1,632.8	7,081.4	-5,448.6
RB01	817.1	91.8	725.3
RB02	6,014.6	158.7	5,855.9
RB03	9,467.0	129.5	9,337.5
RB04a	469.6	341.4	128.2
RB05b	853.8	36.6	817.1
RB05c	109.8	1,251.0	-1,141.1
Red Bank Terrace	9,390.5	2,006.7	7,383.8
Slope Regrade	8,786.3	153.4	8,632.9
St Catherine's Wood	6,096.3	1,747.2	4,349.1

1 The available bank cut is the cut volume between the two subject surfaces. That material to be excavated is considered to be in its in situ bank density state (its natural state prior to excavation).
2 As the bank cut is excavated (and thereby placed in a loose state), it will occupy this increased volume, which is obtained by multiplying the available bank cut by the material's hauling bulkage factor.
3 The excess (positive) or deficit (negative) volume is obtained by subtracting the compacted fill required from the available bank cut.

Rev:	Date:	Revisions
C	25/5/22	Model updated over steps/ramps. Soil depths revised
B	8/3/22	Updated to reflect revised arrangement & construction details
A	5/3/22	Updated survey & design data used (ARUP Mar22)

Scale : 1:1000 Date : 16/02/2022

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BAM Nuttall
Victoria North
Initial Cut Fill Map

Rev: A B C

Drawing No: MCL/BAM2201/001

Original Drawing Size: 841x1189 (A0)



Notes:

Rev:	Date:	Revisions

Scale : 1:1000 | Date : 08/03/2022

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BAM Nuttall
Victoria North
Cut / Fill Zones

Rev:

Drawing No: MCL/BAM2201/005 | Original Drawing Size: 841x1189 (A0)

Earthworks Programme Strategy

2678.9m3
Cut & Fill

RB05

RB05a

1221.5m3
Cut & Fill

RB04

7407.1m3
RB02 & RB03
Stockpile

129.5m3
Cut & Fill

2572.5m3
Disposal

376.4m3
RB04 & RB05c

4400.9m3
RB02 & RB03
Stockpile

153.4m3
Cut & Fill

7489m3
Disposal

4232m3
Invasive
Species

RB01

1632.8m3
Cut & Fill

250.5m3
Cut & Fill

RB17

1750.8m3
Disposal

4232m3
Invasive
Species
Disposal

RB16

184.4m3
RB05a&b

RB12a

5448.6m3
Plateau Rd

2006.7m3
Cut & Fill

HAZ-DR-002

HAZ-SW-002

HAZ-DR-002

RB11

RB06

HAZ-DR-002

NT03

HAZ-DR-002

NT02

RB08

RB07

Legend

- Historic Carriage Shed
- Historic Gas Slab
- Invasive Species Disposal
- Proposed Material Stockpile for Disposal
- Disposal Haul Route

A1

RB05a
43.50m

RB05b
42.00m

RB05c
43.00m

RB04a
42.00m

RB03
38.00m

RB02
38.00m

RB01
40.00m

RB12b

RB12a

RB11

RB08

RB07

RB06

RB16

RB17

NT04

NT03

NT02

1 in 3 slopes from Plateau Avenue to existing ground

1 in 3 slopes from Plateau Avenue to development plots

Existing slope regraded to 1:2.5

Notes:

1. Topograhical data based on Paragon Surveys Drawing No. PS-2158-TS Issue P.
2. All levels are in metres above Ordnance Datum.
3. Refer to Landscape Architect drawings for details of soft and hard landscaping in the development site.
4. Development masterplan based on Planit drawing VNIF-PLA-ZZ-YYY-DR-L-1011 Rev P04.
5. Plot boundaries are indicative based on FEC masterplan.
6. Plot levels represent the proposed ground level for the interim state following HIF Infrastructure Works and do not represent building Finished Floor Levels.

Key:

- Red Line Boundary
- Development Plot Boundaries
- Proposed Major Contour (0.5m interval)
- Proposed Minor Contour (0.1m interval)

Rev	Date	Description	By	Chkd	Appd	Auth
P01	26/11/21		RS	RG	RG	—
P02	17/12/21		RS	RS	RG	—
P03	02/03/22	Draft for Client Comment	OM	RS	RG	—
P04	28/06/22	Stage 4 Draft	ID	RS	LS	—

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Client

MANCHESTER CITY COUNCIL

bam nuttall

Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

Proposed Site Contours

Scale at A1	1:1000	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	S2 - Issued for Information		

Rev	By	Chkd	Appd	
P04	ID	RS	LS	—
	Date 28/06/22	Date 28/06/22	Date 28/06/22	—

Name

VNIF - ARP - 00 - YYY - DR - CE - 0001

Project | Originator | Volume | Location | Type | Role | Number

Do not scale

© Arup

A1



Notes:

1. Topograhical data based on Paragon Surveys Drawing No. PS-2158-TS Issue P.
2. All levels are in metres above Ordnance Datum.
3. Refer to Landscape Architect drawings for details of soft and hard landscaping in the development site.
4. Development masterplan based on Planit drawing VNIF-PLA-ZZ-YYY-DR-L-1011 Rev P04.
5. Plot boundaries are indicative based on FEC masterplan.
6. Plot levels represent the proposed ground level for the interim state following HIF Enabling Works and do not represent building Finished Floor Levels.

Key:

- Red Line Boundary
- Development Plot Boundaries
- C 0.00m Proposed Cut
- C 0.00m Proposed Fill

Rev	Date	Description	By	Chkd	Appd	Auth
P01	26/11/21		RS	RG	RG	—
P02	17/12/21		RS	RS	RG	—
P03	02/03/22	Draft for Client Comment	OM	RS	RG	—
P04	28/06/22	Stage 4 Draft	ID	RS	LS	—

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Client

MANCHESTER CITY COUNCIL

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Project Title

Victoria North HIF Infrastructure & Enabling Works

Drawing Title

Proposed Site Isopach

Scale at A1	1:1000	Arup Job No	282022-00
Role	Civil - Earth works and Geotechnics		
Suitability	S2 - Issued for Information		

Rev	By	Chkd	Appd	
P04	ID	RS	LS	—
	Date 28/06/22	Date 28/06/22	Date 28/06/22	—

Name

VNIF - ARP - 00 - YYY - DR - CE - 0002

Project | Originator | Volume | Location | Type | Role | Number

Do not scale

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A1

Tall floodlight

Concrete slabs from former buildings

Existing earth bund

Collapsed pipe discharging water. Testing confirms water has a high nitrogen content

Existing hut with pumping equipment to be retained

Electric cables to be removed

Approximate location of demolition waste

Turntable, location determined from historical drawings

Existing toilet block and slabs

12m deep drainage manhole, suspected connection to manhole by river (assumed location)

Debris from human occupation distributed throughout area

Demolition of Creamline Dairies site will result in services left in situ which are to be abandoned

Viaduct wall under surface

Two trees which obstruct access

Extent of works and site clearance within the public highway will be subject to a S278 agreement.

Electric cables to be removed

Large fallen tree blocking access from car park area

Below ground oil interceptor, size to be confirmed on site

Concrete Surface (5445 sqm) at Vaulkers Yard to be removed

Combined water sewer manhole and live connecting pipe

Electric cables to be removed

Location of below ground tank confirmed via BH308. Size to be confirmed on site

Timing of abandonment of exisiting utility assets in Hargreaves Street dependent on FEC demolition phasing. These works may be undertaken by FEC in the future if existing land uses are retained beyond the HIF timeframe.

RB01 RB02 RB03 RB04 RB05a RB05b RB05c RB06 RB07 RB08 RB09 RB10 RB11 RB12a RB12b RB16 RB17

NT02 NT03 NT04

HAZ-GE-002 HAZ-GE-003

Notes

1. All dimensions are in mm, all levels in mAOD, unless specified otherwise.
2. This map is reproduced from Ordnance Survey Material with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office (c) Crown Copyright. License Number 100019568 (2021).
3. Layout is based on:
   - Plot boundaries developed in conversation with FEC Winter 2021/22 boundaries between adjacent plots are indicative only and are subject to change as the FEC masterplan is developed.
   - Topographical Survey drawing PS-2158-TS by Paragon Surveys dated September 2021.
4. Existing Utilities and Drainage layout based on the following information:
   - Utility Search Map drawing 97079 by Atkins dated 24/06/2021.
   - GPR Survey drawing PUM-11943-U-DR-0001 Rev 02 undertaken by Precison Utility Mapping dated 18/01/2022.
   - Site walkover observations.
5. Due to the previous industrial land uses and buildings which occupied the site, it is anticipated that there are private services present on the site. These are to be abandoned within the site clearance process.
6. Works within public highway will be subject to a Section 278 agreement.

Key

- HIF Site Boundary
- Plot Boundary

Existing features to be removed

- Hardstanding and Below Ground Features
- Large Areas of Hardstanding or Surfacing
- Above Ground Features
- Surface debris
- Fencing
- Private / other drainage features
- Drainage Combined Sewer
- Private / other services features
- Electricity 6-6.6kV
- Electricity Low Voltage
- Water Distribution Main
- Removal to be Confirmed

FND Foundation
DP Draw Pit
LP Lighting Post
RW Retaining Wall

Rev	Date	Description	By	Chkd	Appd	Auth
P01	01/09/22	WS4 Issue for BAM Review	AS	AL	LS	—

Safety, Health and Environmental Information

Notes below are additional to hazards/risks normally associated with this type of work. Numbers correspond to Risk Register references (document reference VNIF-ARP-ZZ-YYY-RE-WD-0002)

Construction (Location Specific)

- HAZ-GE-002 - Steep slopes (potential instability)
- HAZ-GE-003 - Induced slope instability due to inappropriate siting of stockpiles during earthworks

Construction (Site Wide)

- HAZ-SW-002 - Buried Existing Services
- HAZ-SW-006 - Asbestos
- HAZ-SW-007 - Unexploded Ordnance (UXO)
- HAZ-SW-011 - Hazardous plants

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Client: MANCHESTER CITY COUNCIL / bam nuttall

Project Title: Victoria North HIF Infrastructure & Enabling Works

Drawing Title: Site Clearance

Scale at A1	1:1250	Arup Job No	282022-00
Role	GIS & Land Surveyors		
Suitability	S3 - Issued for Review and Comment		

Rev	By	Chkd	Appd	
P01	AS	AL	LS	—
	Date 01/09/22	Date 01/09/22	Date 01/09/22	—

Name: VNIF - ARP - 00 - YYY - DR - G - 0013
(Project - Originator - Volume - Location - Type - Role - Number)

Do not scale

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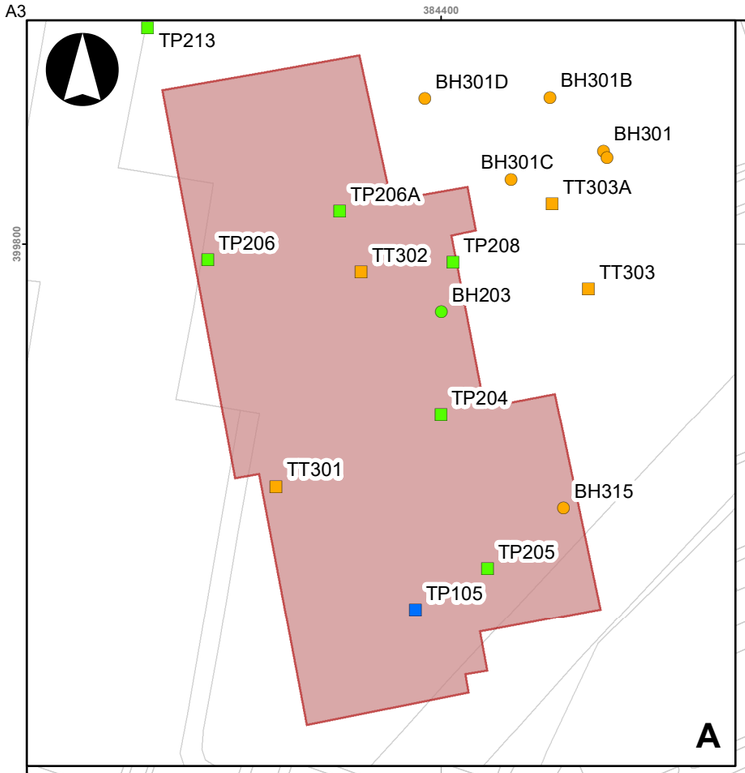
Appendix B

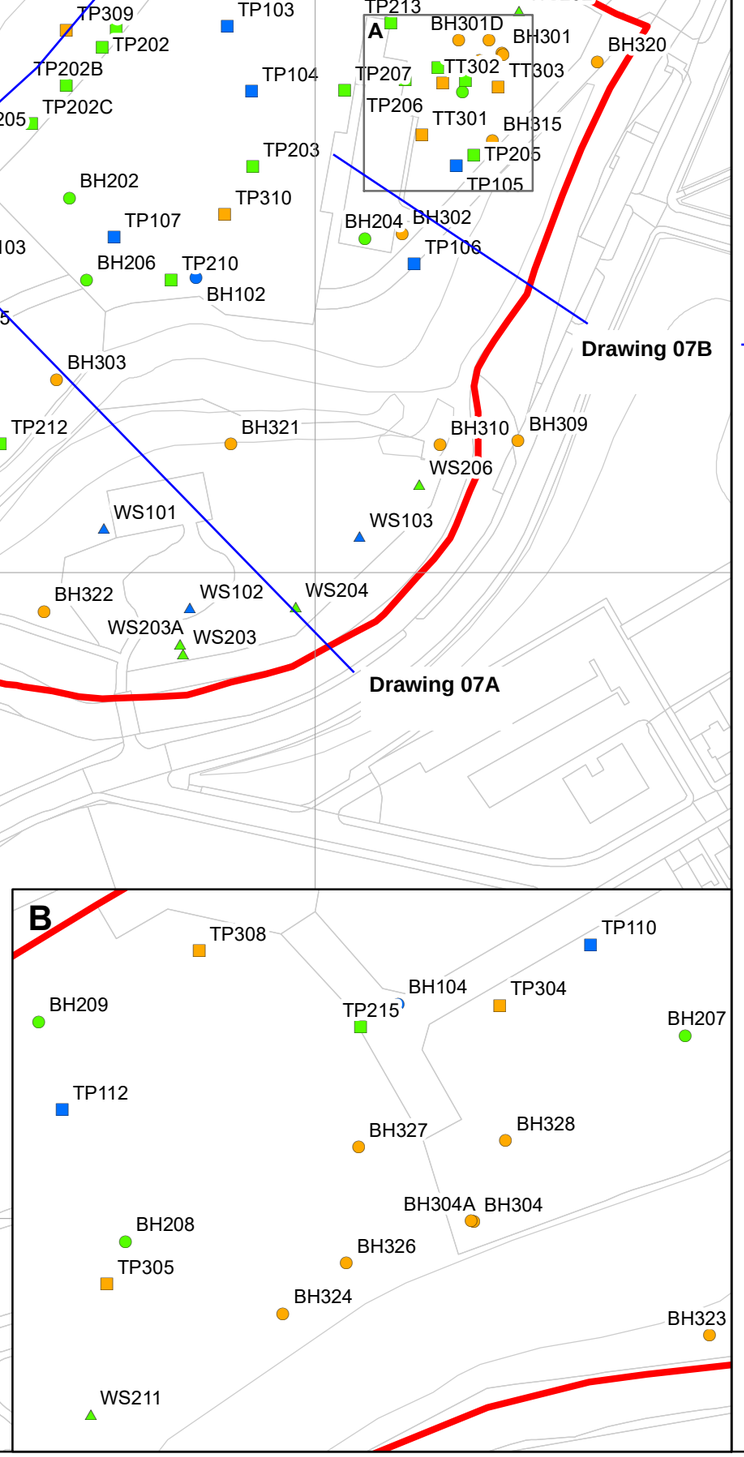
Site Investigation Plans

A3

384400 384600 384800

3398800 3399600 3399400





Drawing 05A
Drawing 05B
Drawing 05C
Drawing 05D
Drawing 05E
Drawing 06
Drawing 07A
Drawing 07B

Legend

- Site Boundary

Phase 1 GI
- Borehole
- Trial pit
- Window sample

Phase 2 GI
- Borehole
- Trial pit
- Window sample

Phase 3 GI
- Borehole
- Trial pit
- Window sample

River Engineering Works GI
- Borehole
- Gasworks footprint

Cross section lines and associated drawings

Issue	Date	By	Chkd	Appd
P0	2022-06-23	LH	LH	LH

Metres: 0 25 50 100

ARUP

6th Floor, 3 Piccadilly Place
Manchester M1 3BN
Tel+44(0161) 228 2331 Fax+44(0161)228 6879
www.arup.com

Client
BAM Nuttall Limited

Project Title
Victoria North

This drawing relates to
Ground Investigation Interpretive Report
VNIF-ARP-ZZ-YYY-RP-CG-0012

Drawing Title
Ground Investigation Locations

Scale at A3
1:1,900

Arup Job No	Suitability
282022	**Issue**

Name	Rev
Drawing 01	**P1**

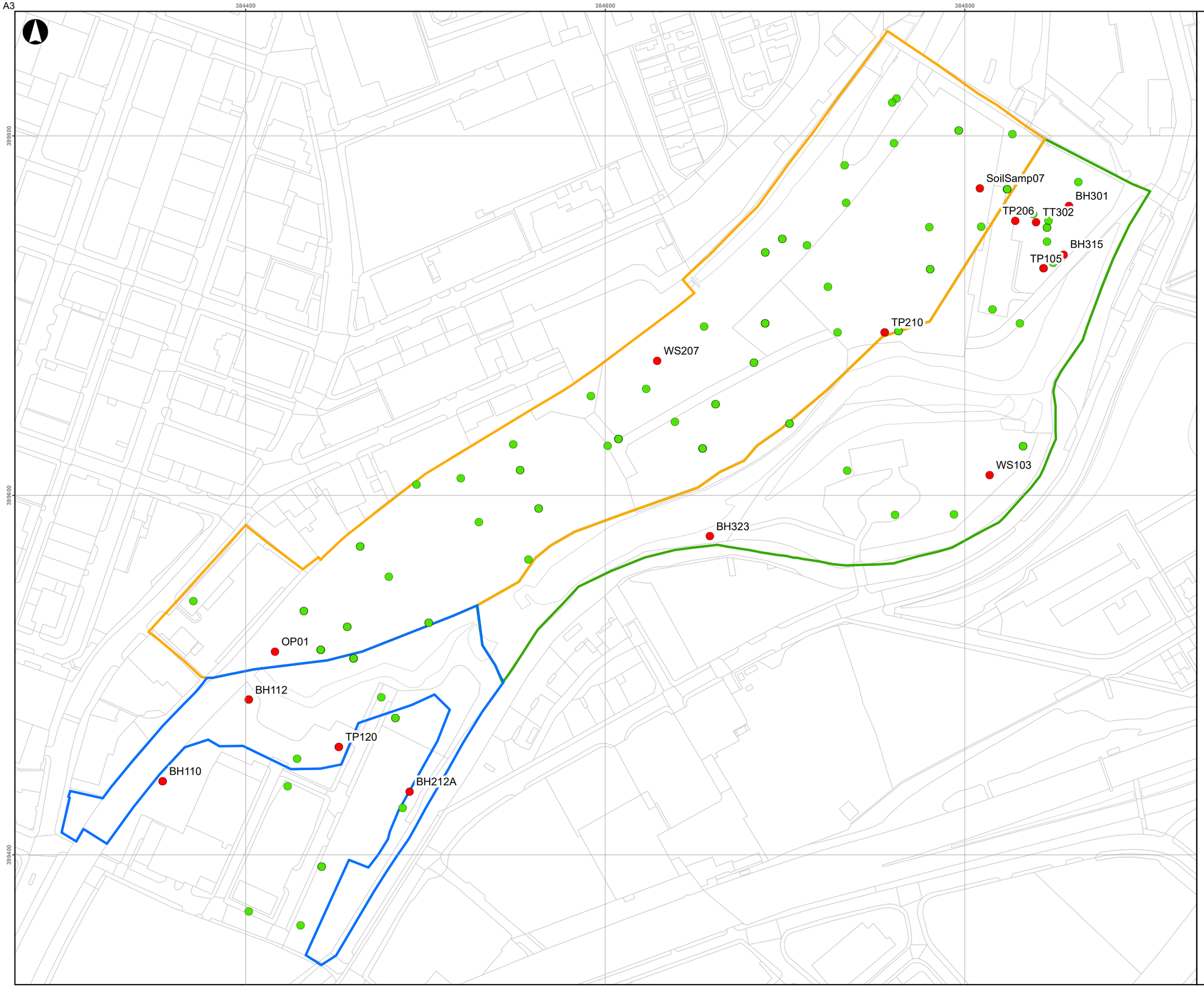
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© Arup

A3

384400 384600 384800

399800 399600 399400



Legend

Site Area

- Red Bank Plateau
- Red Bank Terrace
- St Catherine's Wood

Asbestos identification

- Asbestos detected
- Asbestos not detected

Issue	Date	By	Chkd	Appd
P1	2022-08-05	LH	LH	LH

Metres
0 25 50 100

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Manchester , M1 3BN
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Client
BAM Nuttall Limited

Project Title
Victoria North
This drawing relates to
Ground Investigation Interpretive Report
VNIF-ARP-ZZ-YYY-RP-CG-0012

Drawing Title
Identification of Asbestos in Soil Samples

Scale at A3
1:1,900

Arup Job No
282022-00

Suitability
Issue

Name
Drawing 15

Rev
P1

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A3

384400 384600 384800

399800 399600 399400

BH101 (0.8m)
BH203 (11.7m)
TT303 (0.35m)
TT302 (0.3m, 0.8m)
TT301 (2.45m)
BH103 (1m)
BH102 (3.5m)
WS205 (2m)
TP109 (0.3m)
BH327 (7.4m)
BH323 (0.5m)
BH314 (7.5m)
BH306 (0.5m, 1m)
BH213 (1.2m)
TP120 (0.3m)
BH110 (3m)
BH308 (1m)

Legend

Site Area

- Red Bank Plateau
- Red Bank Terrace
- St Catherine's Wood

HazWasteOnline classification

- Hazardous
- Non Hazardous

Issue	Date	By	Chkd	Appd
P1	2022-08-04	LH	LH	LH

Metres
0 25 50 100

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Client
BAM Nuttall Limited

Project Title
Victoria North

This drawing relates to
Ground Investigation Interpretive Report

VNIF-ARP-ZZ-YYY-RP-CG-0012

Drawing Title
Hazardous Waste Classification

Scale at A3
1:1,900

Arup Job No
282022-00

Suitability
Issue

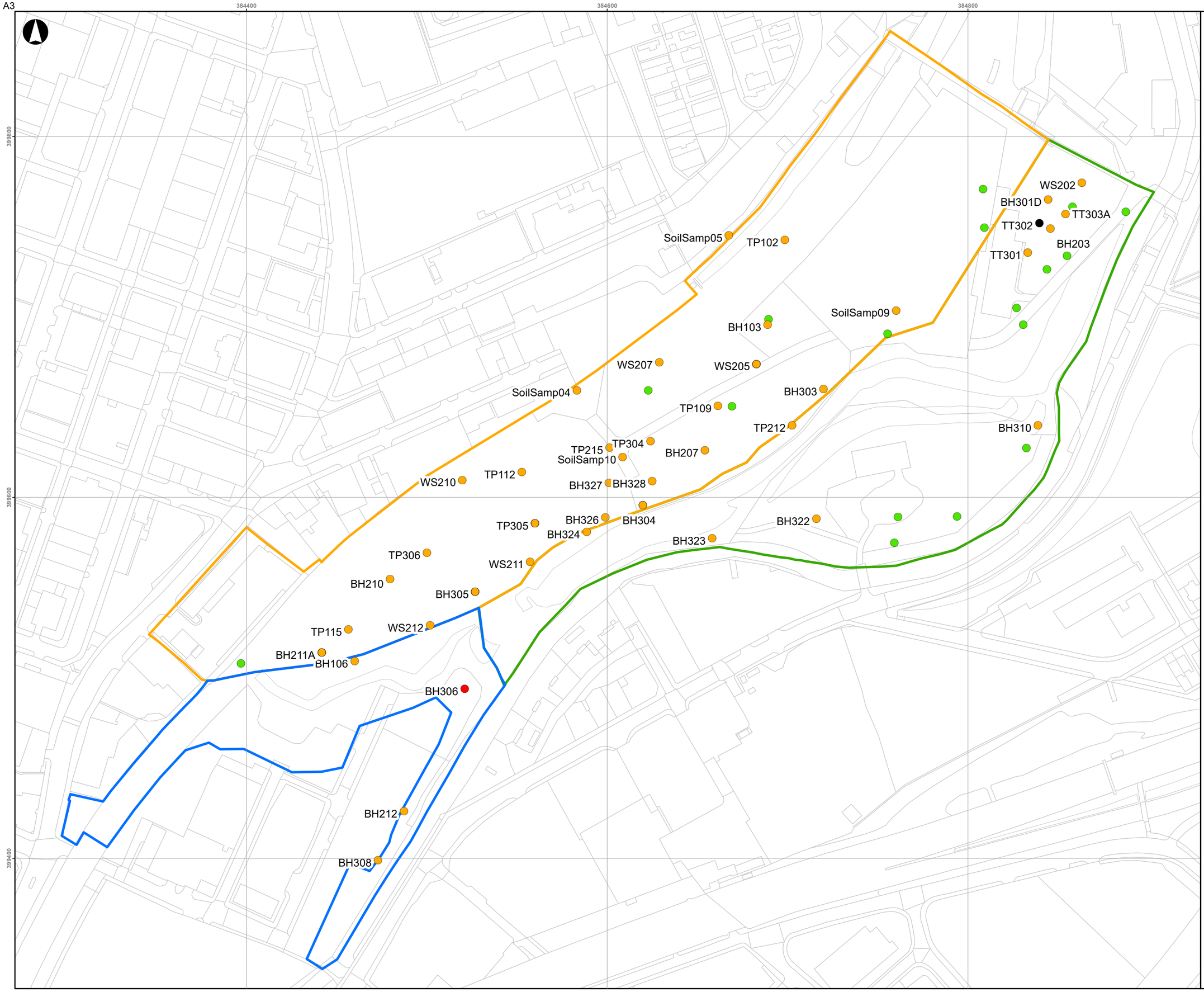
Name
Drawing 17

Rev
P1

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A3



Legend

Site Area

- Red Bank Plateau
- Red Bank Terrace
- St Catherine's Wood

Landfill type

- Inert
- Non-Hazardous
- Hazardous
- Hazardous – requires TOC treatment

Issue	Date	By	Chkd	Appd
P1	2022-08-04	LH	LH	LH

Metres
0 25 50 100

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Client
BAM Nuttall Limited

Project Title
Victoria North
This drawing relates to
Ground Investigation Interpretive Report
VNIF-ARP-ZZ-YYY-RP-CG-0012

Drawing Title
Waste Acceptance Criteria Classification

Scale at A3
1:1,900

Arup Job No	Suitability
282022-00	**Issue**

Name	Rev
Drawing 18	**P1**

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A3

384400 384600 384800

399800 399600 399400

BH101 (0.8m)
TP202 (0.3m)
TP104 (0.3m)
TT302 (2.45m)
TT303 (0.35m)
TT301 (0.3m)
BH103 (0.3m)
BH102 (0.3m, 3.5m)
TP210 (0.3m)
BH305 (1.0m)
OP02 (0.1m)
BH211A (10.5m)
OP01 (0.1m)

Legend

Site Area

- Red Bank Plateau
- Red Bank Terrace
- St Catherine's Wood
- Samples exceeding TPH saturation limit

Key features

- Bridge
- Carriage Shed
- Infilled Channel
- Infilled Water Body
- Railway Turntable
- River Irk
- Gasworks footprint
- Approximate Extent of Regrading & Reduced Level Dig

Issue	Date	By	Chkd	Appd
P1	2022-08-12	LH	LH	LH

Metres
0 25 50 100

ARUP

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Manchester , M1 3BN
www.arup.com

Client
BAM Nuttall Limited

Project Title
Victoria North

This drawing relates to
Ground Investigation Interpretive Report

VNIF-ARP-ZZ-YYY-RP-CG-0012

Drawing Title
Samples Exceeding TPH Saturation Limit

Scale at A3
1:1,900

Arup Job No
282022-00

Suitability
Issue

Name
Drawing 20

Rev
P1

\\globalgis\UK\280000\282022-00 Vic North\Workspaces\VN Phase 3 GIR - Drawing 02 onwards.mxd

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Appendix C

JIWG Output Sheets

JIWG

Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Project Reference	LKC 22 1587
Site Name	Victoria North Infrastructure
Client	BAM
Run by	CB
Date	21-Oct-22
Scenario details	Earthworks - TT302 only

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	1
Extent of degradation of ACMs at outset of work	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - >0.1 %wt/wt	4
Sub-total		**7**

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking Low

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Exposure Factors

		Score
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.01 fibres/ml	1
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected	4
Best description of primary host material matrix (soil/made ground)	Coarse to Fine Sand	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1
Sub-total		**12**
Exposure ranking		Medium
Combined hazard and exposure ranking	**19**	Low

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Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

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Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Project Reference	LKC 22 1587
Site Name	Victoria North Infrastructure
Client	BAM
Run by	CB
Date	21-Oct-22
Scenario details	Earthworks - NE Area (excluding TT302)

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Sub-total		**13**

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking **Medium**

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Stage 2

Exposure Factors

			Score
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.01 fibres/ml		1
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)		4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected		4
Best description of primary host material matrix (soil/made ground)	Coarse to Fine Sand		2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium		3
Sub-total			**14**
Exposure ranking			Medium
Combined hazard and exposure ranking		**27**	Medium

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Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

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Asbestos in Soil and Construction & Demolition Materials

Project Reference	LKC 22 1587
Site Name	Victoria North Infrastructure
Client	BAM
Run by	CB
Date	21-Oct-22
Scenario details	Earthworks - Remainder of the site

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - <0.001 to 0.01 %wt/wt	1
Sub-total		**12**

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking **Medium**

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Exposure Factors

			Score
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.01 fibres/ml		1
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)		4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected		4
Best description of primary host material matrix (soil/made ground)	Coarse to Fine Sand		2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium		3
Sub-total			**14**
Exposure ranking			Medium
Combined hazard and exposure ranking		**26**	Medium

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Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

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JIWG

Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Chrysotile alone	0
Sub-total		2
Hazard ranking		Very Low

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - ≥0.1 %wt/wt	4	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		11	
Exposure ranking			Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Construction	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Low
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		4D	Medium
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Construction workers and visitors on site. NE Area - TT302 only

Interpretation of scenario ranking by DST	Low Risk

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Version 2, February 2017

JIWG

Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**11**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Construction	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		4D	Medium
Overall ranking			Medium

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Construction workers and site visitors - NE Area (excl TT302)

Interpretation of scenario ranking by DST	Medium Risk

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Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**10**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Construction	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		4D	Medium
Overall ranking			Medium

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Construction workers and visitors - Remainder of the site

Interpretation of scenario ranking by DST	Medium Risk

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Version 2, February 2017

JIWG

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Chrysotile alone	0
Sub-total		2
Hazard ranking		Very Low

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - ≥0.1 %wt/wt	4	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		11	
Exposure ranking			Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Commercial/industrial	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		**5**	**Medium**
Combined hazard, exposure and receptor ranking			**Low**
Pathway: Distance of Receptor from Source	>50m distance from edge of area of disturbance	2	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		2D	**Low**
Overall ranking			**Very Low**

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offsite workers and visitor - NE Area TT302 only (TT302 over 50m from nearest workers / visitor receptors)

Interpretation of scenario ranking by DST	Very Low Risk

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Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**11**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Commercial/industrial	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		**5**	**Medium**
Combined hazard, exposure and receptor ranking			**Medium**
Pathway: Distance of Receptor from Source	>50m distance from edge of area of disturbance	2	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		2D	**Low**
Overall ranking			**Low**

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offsite workers / visitors - NE Area (excl TT302) - assumes NE area is >50m from nearest receptors.

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**10**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Commercial/industrial	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		**5**	**Medium**
Combined hazard, exposure and receptor ranking			**Medium**
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		3D	**Low**
Overall ranking			**Low**

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offsite workers / visitors - Remainder of the site

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Chrysotile alone	0
Sub-total		2
Hazard ranking		Very Low

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - ≥0.1 %wt/wt	4	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		11	
Exposure ranking			Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Public open space or building	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	< 1 hour in any single day (e.g. frequent but short exposure event)	1	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Low
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		3D	Low
Overall ranking			Very Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	General Members of the Public - NE Area TT302 Only

Interpretation of scenario ranking by DST	Very Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**11**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Public open space or building	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	< 1 hour in any single day (e.g. frequent but short exposure event)	1	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		3D	Low
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	General Member of the Public - NE Area (excl TT302)

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**10**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Public open space or building	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	< 1 hour in any single day (e.g. frequent but short exposure event)	1	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		3D	Low
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	General Members of the Public - Remainder of the site

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Chrysotile alone	0
Sub-total		2
Hazard ranking		Very Low

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - ≥0.1 %wt/wt	4	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		11	
Exposure ranking			Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		7	High
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	>50m distance from edge of area of disturbance	2	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		2D	Low
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offsite Residents - NE Area TT302 - assumed to be >50 from this area of the site.

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**11**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		7	High
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	>50m distance from edge of area of disturbance	2	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		2D	Low
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offsite Residents - NE Area (excl TT302) - assumed >50m from this area of the site.

Interpretation of scenario ranking by DST	Low Risk

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Asbestos in Soil and Construction & Demolition Materials

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		12
Hazard ranking		Medium

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3	
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4	
Best description of primary host material matrix	Coarse to Fine Sand	2	
Sub-total		**10**	
Exposure ranking			**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		7	High
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		3D	Low
Overall ranking			Low

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Project Reference	LKC 22 1587

Site Name	Victoria North Infrastructure
Client	BAM

Run by	CB
Date	7th Feb 2023
Reviewed by	PQ

Characterisation of scenario being evaluated	Offiste Residents - Remainder of the site - assumed >10m from impacted area

Interpretation of scenario ranking by DST	Low Risk

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Appendix D

Typical Methodology for Reassurance Monitoring
HSE information sheet EM8

Typical Methodology for Reassurance Air Monitoring

A site specific qualitative risk assessment has concluded the asbestos in made ground soils at the site poses a low risk to site operatives and local residents. However, there is potential that other sources of asbestos containing materials (ACMs) could be encountered during the remediation works.

On discovery of other potential ACMs works will stop, the area will be made safe and further assessment of the material will be carried out by a suitably qualified asbestos consultant. Any recommendations made by the asbestos consultant will be recorded in the daily site records and followed accordingly. If the risk from fibres being released increases to a moderate risk, work in that area will stop until real-time onsite air monitoring and onsite microscope analysis of airborne fibres can be carried out to assess the dispersal, if any, of fibres.

Until, classification analysis can be carried out, it should be assumed that any fibres detected are asbestos fibres. Where fibre concentrations are approaching the HSE clearance indicator of 0.01f/ml, appropriate additional mitigation measures will be implemented (comprising; extra damping down, PVA additives, surfactant or utilisation of misting systems). Where fibres are detected, further laboratory analysis will be carried out to retrospectively classify the types of fibres detected. If unsafe levels of fibres are detected above 0.01f/ml, all works in that area will be stopped until revised mitigation procedures and monitoring procedures are agreed with the asbestos consultant, Client and the local authority. Work in these areas will only commence upon further risk assessment and confirmation that real-time monitoring demonstrates control measures are adequate.

If the risk from fibres being released increases to a moderate risk or when planned disturbance of potentially impacted materials activities is expected to take several days, daily air monitoring will be carried out by an appropriately qualified and accredited asbestos consultant in accordance with HSG248 (HSE, 2005). Detailed records will be maintained during and after the works have been completed.

For prolonged activities, i.e., where large areas of potentially moderate to high risk impacted soils are encountered, or upon discovery of unknown materials, the following air monitoring procedures will be adopted:

Situation	Monitoring Frequency	Monitoring Duration	Monitoring Requirements
Discovery of unknown potential ACM or small area of moderate to high risk material.	Once	Once before and once during disturbance (only allowed with control measures).	Monitoring to be carried out at the site boundary, and immediately upwind and downwind of working area. Wind direction to be recorded.
Sporadic small areas of moderate to high risk material.	Weekly	Once before and once during disturbance.	Monitoring to be carried out at the site boundary, and immediately upwind and downwind of working area. Wind direction to be recorded.
Site wide low risk materials.	Fortnightly	Once before and during initial disturbance then once every two weeks.	Immediately downwind to working area and at the site boundary. Wind direction to be recorded.
Work in large area of moderate to high risk material (Stage 1).	Daily	Daily during the first week of disturbance.	Immediately downwind to working area and at the site boundary. Wind direction to be recorded.
Work in large area of moderate to high risk material (Stage 2).	Weekly	Once per week for Weeks 2 and 3 if no fibres above safe levels are detected during Week 1.	Immediately downwind to working area and at the site boundary. Wind direction to be recorded.
Work in large area of moderate to high risk material (Stage 3).	Fortnightly	Once every two weeks from Week 4 onwards 3 if no fibres above safe levels are previously detected.	Immediately downwind to working area and at the site boundary. Wind direction to be recorded.

This methodology may need to be revised if higher fibre concentrations or other ACMs are identified during the works. Likewise, the above monitoring frequencies may be reduced depending on monitoring results.

em8
asbestos essentials

Personal decontamination

Equipment and method sheet

Non-licensed tasks

This information will help employers and the self-employed to comply with the Control of Asbestos Regulations 2012.

It is also useful for trade union and employee safety representatives.

Only carry out work if you are properly trained and have the right equipment.

Remember:

- Asbestos fibres can cause fatal lung disease and lung cancer.
- Check what you're working on before you start.
- Read the safety checklist and sheet a0.
- You must be trained to work safely with asbestos materials.

What this sheet covers

This sheet describes how to decontaminate yourself after work with asbestos materials.

Personal decontamination is easier when you wear the correct personal protective equipment (PPE).

You need to decontaminate yourself properly, otherwise you may take asbestos fibres home on your clothing and expose your family and friends.

Procedures

Removing and decontaminating PPE

- Clean your boots with damp rags – see sheet em7.
- Where available, clean your overalls with the brush attachment on a Class H vacuum cleaner. Vacuum off the brush.
- Otherwise, use damp rags in a gentle 'patting' action. Rubbing can disturb fibres.
- Where there are two workers, they can help to clean each other.
- Peel off disposable overalls. They should be inside out when they have been removed. Put them in a suitable asbestos waste bag.
- Bag up reusable overalls for a specialist laundry.
- Finally, remove your respiratory protective equipment (RPE) in accordance with em6.
- Tape the bag closed.



'Buddy' cleaning using a Class H vacuum cleaner



Make sure you restrict access



Cleaning with damp rag using patting action

Personal decontamination

- A suitable location for personal decontamination should be considered as part of the planning before the job commences.
- Can you use site washing facilities? If so, they must be for your use only.
- Keep other people out during personal decontamination, and until you have cleaned the facilities.
- Wash every time you leave the work area.
- Use damp rags to clean the washing facilities at the end of the job.
- Clean the facilities daily if the job lasts more than one day.
- Inspect the facilities visually once the job is finished.
- Clearance air sampling is not normally needed for washing facilities.
- See sheet em9 for disposal of asbestos waste.

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This document is available at: www.hse.gov.uk/asbestos/essentials/

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First published as part of *Asbestos essentials task manual* 2001.

Published by the Health and Safety Executive 09/17

BAA.2210 Red Bank Neighbourhood, Victoria North HIF Infrastructure Project

Site Water Management Plan:

Controls for the prevention of water pollution

Document ref:							
Revision	Purpose description	Originator	Checked	Reviewed	Authorised	Date	Review Date
01	First issue for review	J.Annett	L. Chambers	L.Chambers	19/10/2023	19/10/2023	

1.0 Scope

This management plan describes current industry best practice controls for preventing water pollution and is intended for use at Manchester Victoria North 'Phase 1' in working to procedure NP27.1: *Water Management.*

2.0 Definitions

Controlled waters/Water environment	• Inland surface waters including, lakes, ponds, rivers, streams, canals, ditches and dykes. • Groundwater and aquifers. • Coastal and territorial waters (within 3 nautical miles of the coast). Note: everything except swimming pools and ornamental ponds
Regulator	Depending on where in the UK your project is operating, the regulator will generally be either the Environment Agency (EA) in England, Scottish Environment Protection Agency (SEPA) in Scotland or Natural Resource Wales (NRW) in Wales. In the case of **ordinary watercourses** in England and Wales (see below) the regulator is the Lead Local Flood Authority (LLFA) department of the Local Authority.
Discharge permit/ consent	Written permission to discharge trade effluent to a controlled watercourse subject to specific conditions identified within. Issued by the regulator.
Pollutant	A substance or energy that has the potential to cause harm to the environment. Typical pollutants from construction works include silt, oils, chemicals, concrete, grout and heat.
Abstraction licence	Written permission required by law to actively remove surface or groundwater, usually by pumping. Licences are issued by the regulator often with specific conditions attached.
Trade effluent	Wastewater resulting from any industrial or commercial activity. Trade effluent includes silty water runoff, wastewater from canteen and welfare facilities as well as water from construction processes.
Main river	Generally larger streams and rivers under the management and regulation of the regulator.
Ordinary watercourse (England & Wales)	All other channels and passages through which water flows (including minor streams, ditches, drains, cuts, dykes and sluices). Under the regulation of Local Authority (LLFA) teams in England and Wales.

3.0 Site setup

3.1 Earthworks / surface strip

Areas of vegetation clearance and topsoil strip should be limited as much as practicable. On large scale or linear projects earthworks should be phased to minimise the areas of exposed ground and reduce the potential risk for runoff. When planning earthworks consideration should be given to the arrangements identified in the water pollution risk assessment and final permanent works design.

The following measures can be employed to control surface water runoff and reduce the risk of pollution to watercourses and drains:

- Early provision of temporary drainage works (e.g., retention ponds, trenches and grips)
- Installation of cut off trenches/catchment drains. Dirty water/clean water should always be kept separate.
- Installation of proprietary silt fences / matting
- Construction of temporary settlement lagoons



Fig 1 Silt fencing positioned on vegetated land



Fig 2 Gravel Trap

These measures may be deployed to control surface water runoff at localised areas from materials stockpiles etc. When designing these controls, consideration must be given to storm events where the calculation of estimated runoff is essential.

Further guidance on the use and installation of these measures is provided in CIRIA C648 *Control of water pollution from linear construction projects.*

Over the Phase 1 works area of Victoria North a large percentage of the surface area is ash providing its own percolation system. Once the excavation starts and a depth is reached where there is clay, any standing water will be pumped to water holding area 1 (or 2) depending upon the location of excavation (see Fig 3).

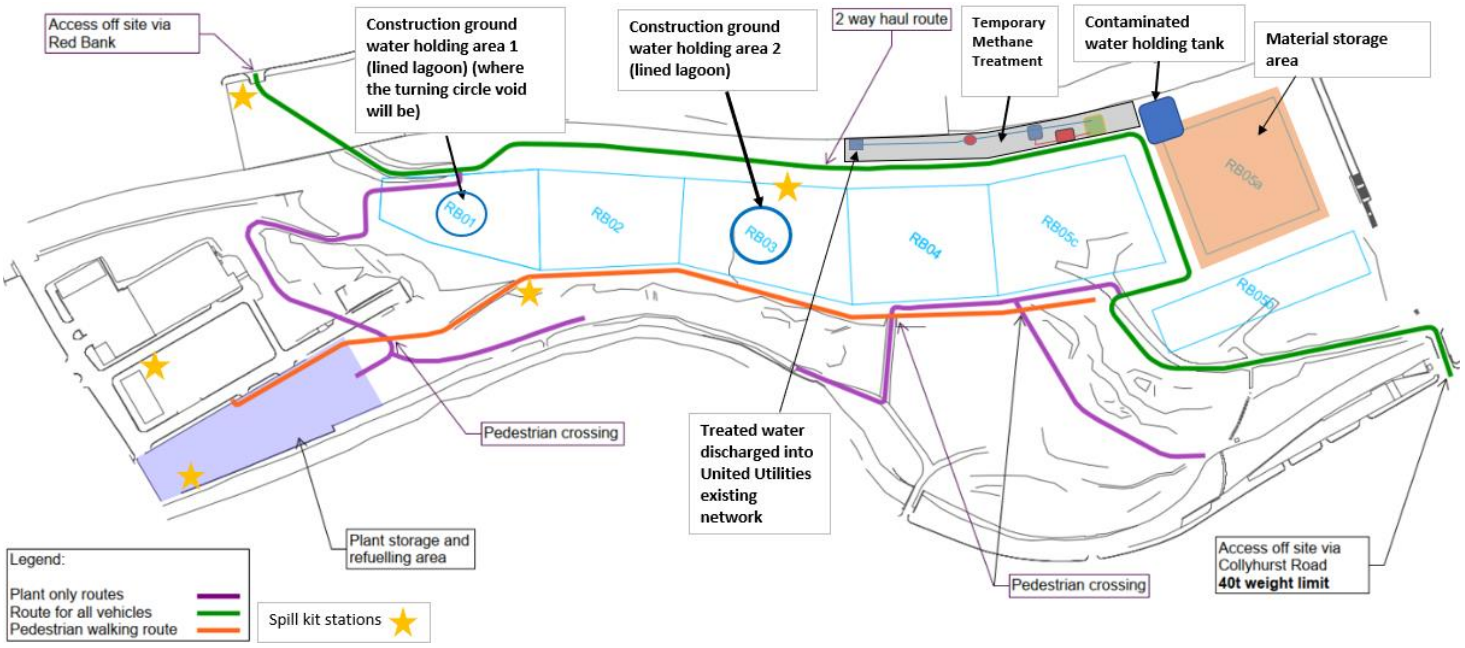


Fig 3

3.2 Runoff from site

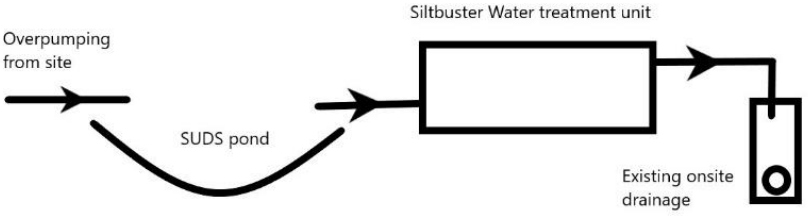
The potential for contaminated runoff (silt/oils) from the site compound must be assessed for Victoria North as part of the initial risk assessment.

At Victoria North a large percentage of the surface area is ash providing its own percolation system. Once the excavation starts and a depth is reached where there is clay, any standing water will be pumped to water holding area 1 (or 2) depending upon the location of excavation (see Fig 3).

If Necessary, a perimeter bund will be installed to contain runoff any stone or crushed concrete used to provide a suitable hard standing. For long-term compound areas consideration should be given to a concrete or asphalt surface with the installation of drainage, oil separators and silt traps.

Surface Water, Run-off, Groundwater and Silt – All operations will be carried out in a manner to minimise the production and discharge of silty waters. Temporary drainage systems will be installed in accordance with the Water Management Plan. See Table A12.

Excess surface water (envisaged to be from excavations) will be pumped to the SUDS ponds to allow to settle. SUDS ponds will be monitored for sediment levels and maintained on a regular basis. Excess water will be pumped from the SUDS pond through a Silt buster unit, to remove further suspended solids, until the permanent drainage construction has been completed. Discharge to existing onsite drainage will be monitored in accordance with EA Trade effluent discharge. The location of the system below will vary throughout the works.



Ref Bam Internal guidance NP27.1 Water management

Fig 4

3.3 Fuel, oils and chemical storage

Fuel, oils and chemicals will be stored in accordance with manufactures guidelines and well away from the sensitive receptors identified in the water pollution risk assessment. Materials should be stored in secure, designated areas e.g., COSHH store away from moving plant and on areas of hardstanding where possible.

Diesel and other oils should be stored in accordance with the requirements of the Control of Pollution (Oil Storage) (England) Regulations. See Environment guidance EG02: *Guidance on oil storage.*
It is suggested that an up-to-date inventory should be maintained of hazardous materials stored on site, including the approximate maximum quantity stored at any one time. This information is particularly useful to the emergency services in the event of a significant spill or fire.

All fuel, oil and chemical deliveries will be supervised by a named refuelling marshal (See Fig 3 for re-fuelling area). Storage tanks will be checked before delivery to prevent overfilling and to ensure the product is delivered to the correct tank. All fuel tanks will be integrally bunded to prevent rainwater ingress. The bunds will have a capacity of 110% of the volume of the products stored within it. All materials will be clearly marked with their contents. Stores will be located at least 10m away from any watercourse/ drain where practicable. Plant nappies will be implemented under all plant left to stand and for all small tools and fuel canisters less than 205litres. Spills will be dealt with as per emergency procedure over leaf.

Ref BAM internal guidance

NP27.2 oil storage and refuelling.

Emergency procedure – pollution incident

In the event of an oil, fuel or silt pollution incident, take action to:

Raise the alarm	you may need assistance
Identify the source	what risks are involved, can you handle it yourself or are the emergency services required?
Protect yourself	are you wearing the correct PPE to deal with the incident?
Help any injured	but do not put yourself or colleagues at further risk
Stop the source	prevent further pollution if safe to do so by plugging leaks, righting drums, closing valves or turning off pumps
Contain the pollution	use emergency materials held on site and ensure that the pollution cannot escape by blocking drains, or creating a trench or bund to protect rivers and other watercourses
Prevent spread	if the pollution has already entered water, prevent its further spread downstream using booms for spills or silt fencing for silt
Notify your supervisor	as soon as it is possible to do so
Clean up	using appropriate absorbent materials or skimmers
Dispose of contaminated materials	used clean up materials will be classed as ‘hazardous’ or ‘special waste’
Restock	emergencies clean up materials should be replenished and restocked following their use

In the event of a major spillage to water (an incident that the project team cannot handle or contain) contact the below for further guidance and advice.

BAM Environment Advisor – Eddie Duncan (M:07748328507)

Emergency spill kits and absorbent materials are located at:

- Hargreaves Street compound
- Volker’s Yard
- Creamline dairy entrance
- The top of the pedestrian walkway
- The temporary methane treatment plant
- Mobile spill kits also kept with all machines.

(See Fig 3 for spill kit stations locations- This is to be made site specific and kept live through the duration of the works).

3.4 Bulk materials storage

Bulk materials such as aggregates, PFA, topsoil and excavation arisings must be stored in designated areas away from surface waters and drains. (Fig 3 shows the designated stockpile area). Consideration will be given to the bunding or sheeting of stockpiles (using geotextiles, jute or coconut matting) to minimise the potential for runoff.

Specialist Stockpiling methodology will be used when dealing with contaminated stockpiles.

3.5 Disposal of wastewater

Wastewater is generated from welfare facilities, construction activities and cleaning / maintenance of plant and equipment. This trade effluent will be discharged to foul sewer under consent from the United Utilities. Where mains sewage is not available the following alternative arrangements are must be considered:

When considering disposal options consideration should be given to site specific constraints including, volume of wastewater anticipated, number of people to be serviced, installation, operational and maintenance costs over the lifetime of the project. Reference should also be made to regulatory guidance PPG 4 *Treatment and disposal of sewage where no foul sewer is available.*

3.6 Treatment and disposal Emerging Water

An unusual orange coloured water was discovered ponding on site March 2022. The water was analysed, and it contained high levels of Methane. (The permitted level of Methane was 0.14mg/l). A pipe was discovered entering the site through an embankment on the site boundary which was the source of the problem.

Having liaised with United Utilities, it was agreed to form a **Temporary Methane Treatment Plant** would be installed to reduce the Methane level below the permitted 0.14mg/l.

How the Temporary Treatment Plant System works (See Fig 3, 5 & 6)-

- The pipe was extended into a large holding tank.
- The water is then pumped from the holding tank into the aeration tank.
- From the aeration tank the water is then pumped into an inspection chamber via an outlet sampling point. There is an Electromagnetic flow meter fitted to the pipe work).
- Once satisfied the water is at a level less than the permitted 0.14mg/l the water is discharged into United Utilities network (Under Consent).
- The water is tested once a week against the criteria in the temporary discharge agreement.

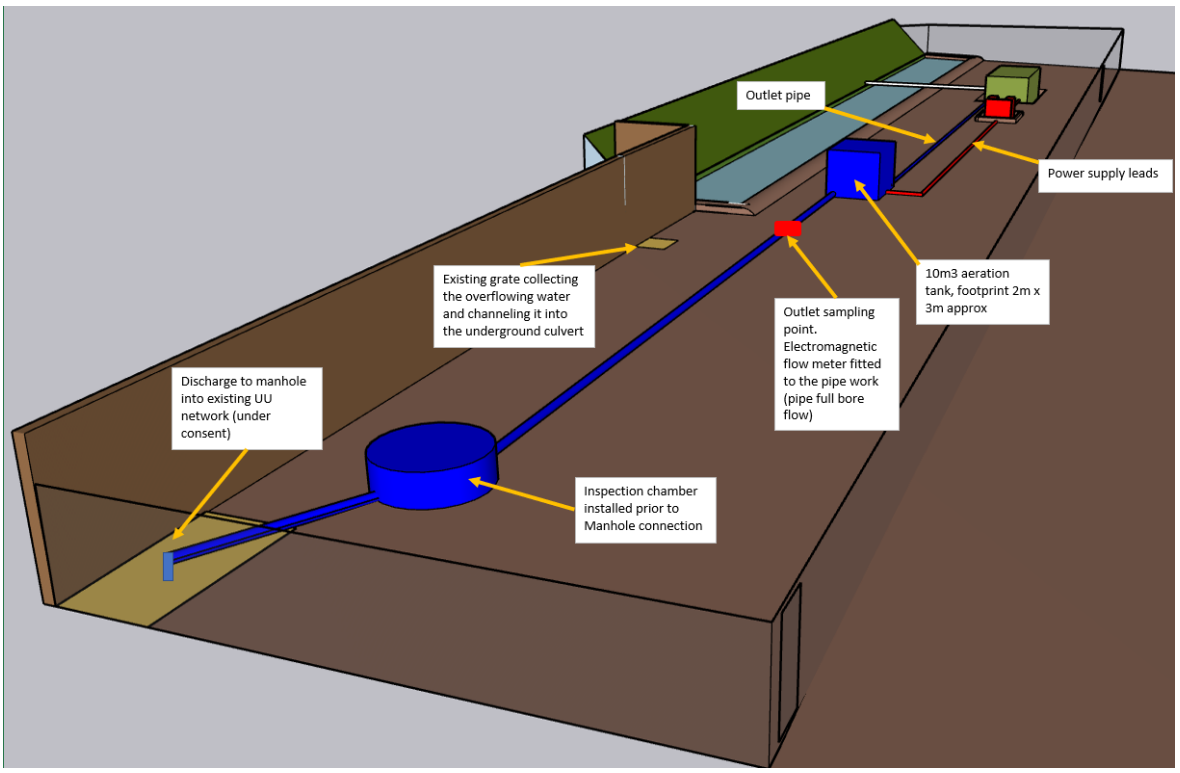

Outlet pipe
Power supply leads
Existing grate collecting the overflowing water and channeling it into the underground culvert
10m3 aeration tank, footprint 2m x 3m approx
Outlet sampling point. Electromagnetic flow meter fitted to the pipe work (pipe full bore flow)
Discharge to manhole into existing UU network (under consent)
Inspection chamber installed prior to Manhole connection

Fig 5

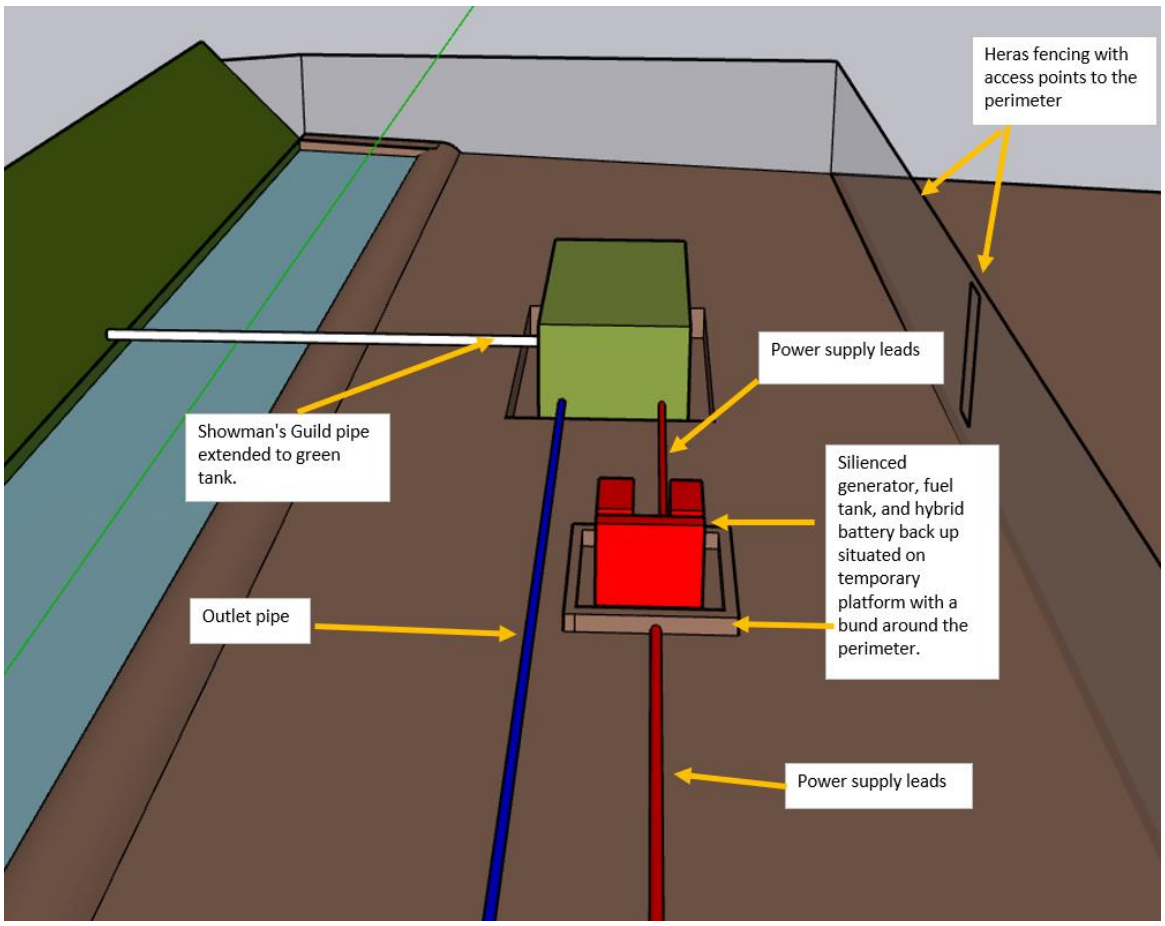

Heras fencing with access points to the perimeter
Power supply leads
Showman's Guild pipe extended to green tank.
Silienced generator, fuel tank, and hybrid battery back up situated on temporary platform with a bund around the perimeter.
Outlet pipe
Power supply leads

Fig 6

Maintenance and operation of Temporary Treatment Plant System -

- Maintenance and operation of the plant will be conducted by the sub-contractor GeoEnvironmental Applications Ltd (GAL) in line with their RAMS **MSRA001**

- Once the temporary treatment plant is in operation, operatives from GAL will be attendance to check the safe and correct operation of the plant.

- A Site Engineer will be in attendance daily to take records of discharge from the flow meter and carry out monitoring of groundwater conditions.

- In addition, the engineer will take samples on a weekly basis in line with United Utilities chemical acceptability of 0.14 mg/l to ensure pumping into their asset is below this value.

Note: Any issues or defects will be reported to the site supervisor and BAM

3.7 Haul routes

Silty water runoff from haul roads has the potential to cause water pollution. To reduce this risk consideration should be given to the use of temporary trackway for haul roads of short-term duration.

More permanent haul roads should be properly designed, draining transversely with a drainage ditch, grip or physical barrier (bund or silt fence) on the downside to capture or control runoff. Careful consideration should also be given to the materials used for haul road construction, with fine graded materials avoided wherever possible.

Vehicles and plant must not be allowed to cross any watercourses regardless of size. River crossings must be agreed with the regulator in advance of the work. Toe boards/silt fences or hoarding must be provided on temporary bridges and water crossings to prevent runoff and debris entering the watercourse.

Note: The use of straw bails is not recommended.

The condition of haul routes (Fig 7- existing haul road Victoria North) and water crossings must be inspected and maintained regularly, particularly after periods of heavy rainfall, to ensure that planned arrangements continue to be effective. Records of inspection are recorded on form EF01: *Water monitoring and maintenance record.*



Fig 7

Care must be taken when using water for dust suppression on haul routes as the application of too much water can lead to increased runoff.



Fig 8 Stone weir



Fig 9 Roadside drainage ditch with silt- fences and sandbags

3.8 Plant and equipment maintenance

All plant and equipment on site must be regularly inspected, well maintained and free from oil leaks. Records of weekly inspections are recorded on form SF508, in accordance with procedure NP4: *Plant*, and daily inspections are carried out by plant operators prior to use although not necessarily recorded. At Victoria North all checks will be carried out at the plant storage and re-fuelling area prior to the machine leaving for work on site.

Environmentally considerate lubricants (ECL's) such as biodegradable hydraulic oils should be specified for plant and equipment working in high-risk areas such as works above, in or near water.
Refuelling of plant and equipment is carried out in accordance with section 3.9 below.
Maintenance and cleaning of plant and equipment should be carried out in a designated area (This will be in the designated plant storage and refuelling area Fig 3) well away from watercourses and drains. Waste from plant maintenance and cleaning (including wastewater) should be contained and disposed of in accordance with procedure NP27.3: *Waste management.*

3.9 Refuelling

Refuelling of plant and equipment will be undertaken at a designated locations on site (see Fig 3), as identified from the water pollution risk assessment and in accordance with procedure NP27.2: *Oil storage and refuelling*. Refuelling locations should be well away from sensitive receptors wherever possible. Only trained designated personnel who have received an appropriate BAM Nuttall toolbox talk should be authorised to carry out refuelling. Spill kits must be made available at each designated refuelling area and personnel trained in their use (again see Fig 3).

Care should be taken where refuelling over water is the only option. Such arrangements must be controlled by a site-specific activity plan.

Further guidance is available in Environment guidance EG02: *Guidance on oil storage.*

4.0 Construction activities

4.1 Works in or near water

A wide range of BAM Nuttall activities take place within, above or adjacent to watercourses including flood defence works, cofferdams, bridge construction, haul route crossings, culvert works, piling, river diversions, bankside maintenance, bridge cleaning and repairs. Victoria North is no exception.

Written permission from the regulator may be required for any works that take place in or near a watercourse. It is important that the project programme allows sufficient time for consultation and the issue of necessary permissions.

Works taking place within watercourses pose significant risk and it is important that a specific risk assessment is completed, and pollution control measures identified for such activity. Control measures that may be employed include:

- oil booms
- silt traps (e.g., weir structures, silt fences and sedimats)
- air curtains
- encapsulation/sheeting works taking place over water (in particular grit blasting)

Note: The use of straw bails is not recommended.

It is also important to establish and maintain contact with the regulator throughout as some sediment or debris loss is inevitable during the works, particularly when installing or decommissioning pollution control measures. Water users downstream (e.g., fish farms, angling clubs and residents) should also be informed of the works and the control measures that will be implemented to prevent pollution.

Emergency plans must be established and communicated to the workforce. The emergency rescue plan for Victoria North can be seen on Fig 10 and Fig 11.

Environment Agency bam nuttall

Water Rescue Procedure

Project Name	Victoria North HIF	**Project Number**	BAA.2210
Site Contact	Steve Donaldson	**Contact Number**	07920 084444
Component Reviewed	Liam Chambers	**Completed By**	John Annett
Reviewed By	Liam Chambers	**Approved By**	Liam Chambers

Procedure

- **Raise the alarm via air horns and shout 'Person in river'.**
  - The first person to witness the incident happening is to sound the alarm.
- **Keep the person in view.**
- **Do not make a rescue attempt by diving into the water unless:**
  - **You are trained in live-saving techniques, and**
  - **The person in the water is unconscious, and**
  - **The rescuer has a safety line attached, and**
  - **Someone else is in attendance.**
- **Any person who is not competent to assist with the rescue must leave the area.**
- **Move to the nearest lifebuoy station and throw the buoy to the person in the river. Keep hold of the end of the lifeline.**
- **Assess a convenient landing point and move to that location.**
- **Provide assistance by drawing in the lifeline until the person is at the landing point.**
  - If the landing point is difficult (slippery, uneven, etc.), do not attempt to pull the person out. Wait for assistance.
- **Once the person has been recovered from the water, keep them warm until transport is able to take the to the first aid station. First aid is to be given if safe and necessary.**
  - The current first aiders on the project are:
    - Stephen Donaldson – General Foreman - **07920 084444**
    - Dan King – Supervisor – **07557 185267**
    - John Annett – Sub Agent - **07795 403153**
- **Whilst priority must always be given to the rescue, a message should be sent to the office ASAP to enable co-ordinated support. Site management will assess whether the emergency services need to be called.**
  - The people who would be involved with making this decision are:
    - Stephen Donaldson – General Foreman
    - Liam Chambers – Site Agent
    - Neil Peters – Project Manager
- **Further action:**
  - Neil Peters (project manager) will inform the relevant parties:
    - Manchester City Council (the client)
    - The Environment Agency
    - The Health and Safety Executive (if applicable)
    - Mark Cullen (BAM health and safety advisor – 07818 537459)
  - An incident report will be compiled by the site management for internal review.
  - Work will stop until the methodology has been reviewed and changed where necessary, and conditions are made safe.
  - An internal investigation around the cause of the event will take place.

Fig 10

Environment Agency bam nuttall

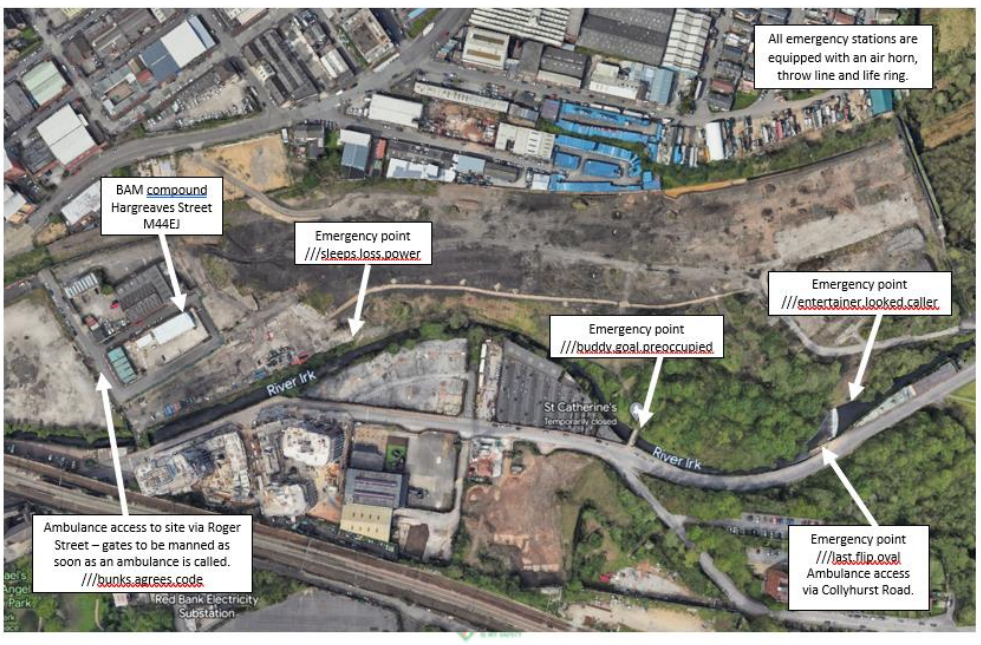


Fig 11

4.2 Works to existing drainage.

Works taking place on existing drainage systems (including headwalls and culvert extensions) on main rivers will require written approval or land drainage consent and the regulator should be consulted.

Note: In England and Wales, all work in, over or adjacent to 'ordinary watercourses' has now transferred from the EA to the LLFA, a department of the Local Authority.

It is important to ensure that the flow capacity of the drainage channel is not compromised during the work as this could lead to problems further upstream (e.g., flooding). Over pumping should be considered so that construction works can take place in the dry. Pumps and any settlement tanks etc should be sized and selected to cope with normal flow and peak flow velocities. The discharge point of the pipe should be placed downstream of the works and protection measures such as geotextile matting, or rock armour used to prevent scouring or the riverbed or erosion of the bank at the point of discharge. Additional pollution prevention measures as described in 4.4 below might also be considered.

4.3 Concrete and grout

Concrete, bentonite, grout and other cementitious based products are highly alkaline (pH 11.5) and uncontrolled releases can have a devastating impact upon water quality.

On site storage or batching of cementitious material must take place in designated areas away from watercourses and drains. Work specific method statements must include for inspection prior to placing concrete to ensure no potential for grout loss from formwork or from pipelines when pumping concrete.

Deliveries of ready-mix concrete must be supervised at all times and drivers instructed on washout arrangements on arrival at site. Wherever possible ready-mix lorries should be instructed to washout at the batching plant. Where this is not possible, arrangements must be made for suitable washout facilities to be provided on site. This may be the provision of a grout sock, concrete washout skips, or a pit isolated from groundwater by an impermeable liner.

Where large volumes of concrete washout water are envisaged or (e.g., batching plants or large pours) then a more permanent water settlement and treatment facility must be considered such as Siltbuster's concrete washout treatment system.



Fig 15 Siltbuster pH unit, used to treat concrete washout.

Concrete washout areas must be inspected and maintained on a regular basis (minimum weekly) to ensure efficient operation. Water from washout areas must be contained and should only be discharged to foul sewer with consent from the sewage undertaker.

Additional care must be taken when placing concrete underwater or in tidal conditions. Consideration should be given to concrete mix design to provide a suitably cohesive mix and limit the loss of fines. This can be achieved by selecting a higher than normal 'fines' content, higher cement content or the use of chemical admixtures. Some grout loss/wash out of fines and subsequent discolouration of water is inevitable and the regulator must be made aware of this when agreeing construction methodologies.

When grouting underground voids such as mine workings, culverts and boreholes, it is important to ensure that the grout does not enter a watercourse by migrating through cracks or fissures. Tests can be carried out in boreholes to determine the permeability of strata and tests carried out during site investigation may help identify the presence of open fissures.

Careful monitoring of grout injection throughout the operation gives an indication of whether grout is being lost. Before starting, it is important to estimate the quantity of grout to be used. If grout cannot be accounted for, operations must be suspended until investigations show that the grout loss will not lead to a pollution incident. Visual monitoring of nearby watercourses should also be carried out.

At Victoria North there are bore holes which are required to be grouted up. BAM Ritchies will be providing the equipment and Method statements and will supply all the necessary environmental controls to prevent against pollution.

4.4 Dewatering

The regulator must be consulted well in advance of any dewatering activity so that appropriate authorisation for abstraction and discharge can be obtained. An abstraction licence is not required when dewatering or pumping water from an excavation providing the anticipated volume is below 20m^3 (England & Wales) or 10m^3 (Scotland) per day.

In order to control pumping and discharge of water on site, a 'permit to pump' system should be used. Records of inspection are recorded on EF03 permit to pump. Whereby no pumping work is allowed to commence until a permit has been issued by the agent or an authorised member of his team. The permit to pump confirms the following:

- The reason for dewatering
- Person responsible for supervising the work.
- Containment/treatment measures to be implemented.
- Confirmation of authorisation/consent from the regulator
- Confirmation of consents conditions
- Arrangements for water quality monitoring during the work
- Emergency arrangements

The construction team must be briefed on the conditions of the permit and accept responsibility for working in accordance with it by signature. The permit is signed off on successful completion of the works and retained as part of the site records.

Specific limits are likely to be imposed within a discharge permit/consent. Typically, for suspended solids, this will be no more than 30mg/litre for discharge to surface waters and 250mg/litre for discharge to sewer. However, limits must be clarified with the regulator as they may vary depending on the watercourse.

The following methods of containment and water treatment should be considered to reduce suspended solid content:

- Pumping to grass land.
- Use of rain guns
- Construction of settlement ponds
- Provision of settlement tanks (e.g., Siltbuster)
- Provision of mechanical separators and filters (cyclone or sand filters)
- Use of flocculent (this should be considered as a last resort and will be subject to agreement from the regulator)



Fig 16 Series of settlement ponds in use



Fig 17 The Siltbuster settlement tank

The method selected will depend on site specifics and agreement from the regulator. The discharge of water to ground, surface water or sewer must be controlled to ensure compliance with any relevant conditions agreed with the regulator / utility company. Particular care should be taken to prevent damage and the potential for further pollution from erosion of riverbanks and scouring of riverbed at the point of discharge.

Water quality either at the 'end of pipe' or within the receiving water must be monitored in accordance with the monitoring regime described in Environment guidance EG03: M*onitoring water quality.*

4.5 Contaminated ground

Works taking place on contaminated sites should be carried out only after comprehensive site investigation and risk assessment. Specific mitigation and control measures will be identified as part of this process.

Clean (uncontaminated) surface water should be diverted away from contaminated areas.

Care should be taken particularly when excavating and piling not to create a pathway for contaminants to escape into ground water.

As detailed in the Remediation Implementation Plan. Any groundwater from within the former Carriage Shed or Gas Works will be pumped into a separate holding tank, and sampled prior to expected removal from site, due to the presence of Hydrocarbons, and other leachates which have been identified during the ground investigation.

Large Stockpiles of contaminated spoil should be avoided. Where this is not possible (e.g. stockpiles of material awaiting chemical testing and analysis) stockpiles should be located on an impermeable surface, bunded (to contain runoff and leaching) and isolated from the site drainage systems.

At Victoria North a large amount of testing will be undertaken throughout the project which will determine the volume of material which will remain and removed from site. A temporary testing lab will be set up on site to ensure that testing will be carried out at source to ensure minimal holding time and delays prior to offsite removal.

4.6 Pollution Prevention Controls

A description of the potential pollutant scenarios based on construction phases/activities and their corresponding preventative measures are presented section. These preventative measures have been developed using best practice guidance whilst also considering the specific conditions and constraints at the Site. These are listed below.

Construction Activity	Potential Pollutant Source	Pollution Route	Prevention Measures
Office setup / Enabling Works			
Construct site offices	Fuel and oil	Spillage to ground	Spill training, spill kits at high-risk locations (SUDS) and on all plant
Enabling works (Fencing / Soil investigation/ trial holes/ utility connections)	Silt and Sediment	Water runoff	Install silt and sediment management, if required (silt fences or similar protection)
Construction Phase			
Clear/scrape/excavate topsoil across site and SUDS ponds	Silt and Sediment	Water runoff	Install silt and sediment management, if required (silt fences or similar protection), and around any stockpiled soils
Excavation Activities	Silt and Sediment	Water runoff	Localised sumps and drainage ditches will be implemented with over pumping arrangements to SUDS ponds.
Sewerage	Unauthorised discharge	Ground water	Sewerage shall be disposed via existing foul water network, transfer off site under waste regulations.
Emerging Water	Suspended contaminants in pipe	Pipe From Showman's Guild	Water from the Showman's guild pipe, is to be piped to reception chamber, treated, and discharge to United Utilities CSO on Site, this is covered under a Temporary Discharge Agreement.
Imported material	Site-won material/imported material	Contaminated material	All imported material will be screened and tested to ensure no contamination is present.
Concrete foundations / RC pile caps / ground beams/ floor slabs	Concrete and cement	Risk of concrete from construction activities entering the drainage system	When concrete is being used all nearby surface drainage features will be covered until concrete works are completed. Wash waters will be treated via silt buster pH unit prior to discharge, which will be monitored to prevent pollution.
Other Potential Pollution Features			
Waste	Waste	Incorrect waste management	All waste must be sorted in accordance with the Site Waste Management Plan in CEMP.
Road Cleaning within/around site roads	Suspended Solids/ mud on road	Water	Temporary haul road to reduce impact of excavated soil removal. A road sweeper will be employed to remove any build-up of soils on the roads within local road network
Use of Chemicals	Chemicals (COSHH)	Spillage to ground	All Chemicals will be stored as per the COSHH regulations in bunded containment. Appropriate spill kits will be available during use.
Refuelling	Fuel and oil	Spillage to ground	Refuelling will be carried out an in accordance with BAM internal guidance. All fuel storage is bunded and prevents rainwater ingress. Spill kits and spill training to be implemented with

Construction Activity	Potential Pollutant Source	Pollution Route	Prevention Measures
			nominated refuellers. Refuelling areas and fuel and oil storage will not be within 10m from any watercourses or sources of water.
General plant operation	Fuel and oil	Spillage to ground	Spill drills to be completed half yearly. All items of plant to carry fully stocked emergency spill kit at all times. Preventative maintenance and daily plant checks in line with BAM Mandatory Procedure NP4 Management of Plant
Construction	Dust	Dust within the air	In periods of dry weather, the need for spraying to reduce dust and potential nuisance will be checked in accordance with the Air Quality Management Plan (within CEMP) Drop heights onto lorries and other equipment will be restricted to minimised dust transport. Water abstracted from ponds on site will be under <20m3 /day to comply with EA guidance.
Inclement weather	Silt & sediment	Surface waters	Weather forecasts to be monitored daily and communicated to the workforce through daily briefings. Resource to be directed to surface water management duties as required during periods of extreme weather.
Over pumping water	Silt & sediment	Surface waters	Permit to pump (EF03) to be used to assess operation and discharge location prior to undertaking.

5.0 Completion of permanent works

Controls introduced during the undertaking of construction activities may need to be removed or ceased as areas of permanent works are completed in preparation for handover to the client.

Until the contractual handover date, responsibility for preventing water pollution remains with BAM Nuttall and, in order to reduce risk and potential liability, it is important to agree with the client and the regulator the residual risks and consequent control measures to be adopted at this stage. Ideally this should be done well in advance of substantial completion (and preferably during the contract negotiation phase) in order that changes in design or programme can be adopted.

5.1 Runoff from de-vegetated ground

Runoff from completed earthworks which have yet to have become established with grasses and other ground cover are vulnerable to erosion and runoff. Consideration should be given to the use of:

Prompt sealing, and compaction of exposed areas of ground areas of exposed ground should be lightly graded to promote steady runoff and also sealed and compacted suitably to avoid becoming waterlogged, minimizing the risk of silt migration and large ponds of water.

Benching and roughening of slopes: graded slopes look professional but increase the velocity of surface water runoff, the risk of erosion and subsequent silty water runoff. Consideration should be given to more natural rough, uneven slopes as this encourages infiltration and decreases the velocity of surface water runoff. It also allows seeds and vegetation to establish more readily. Roughening can be achieved with the use of tracked machinery leaving track imprints parallel to the slope.

Hydroseeding of areas upon completion of earthworks.
Upon completion of works it will be necessary to hydroseed areas to encourage vegetation and ground cover to establish.

5.2 New drainage discharge

It is important to ensure that relevant permissions have been obtained for any new drainage and discharge points before construction works take place and most importantly before they are commissioned. For some BAM Nuttall clients, e.g. Highways Agency, Network Rail and Environment Agency, consent may already be granted under permitted development rights but it is important to confirm this.

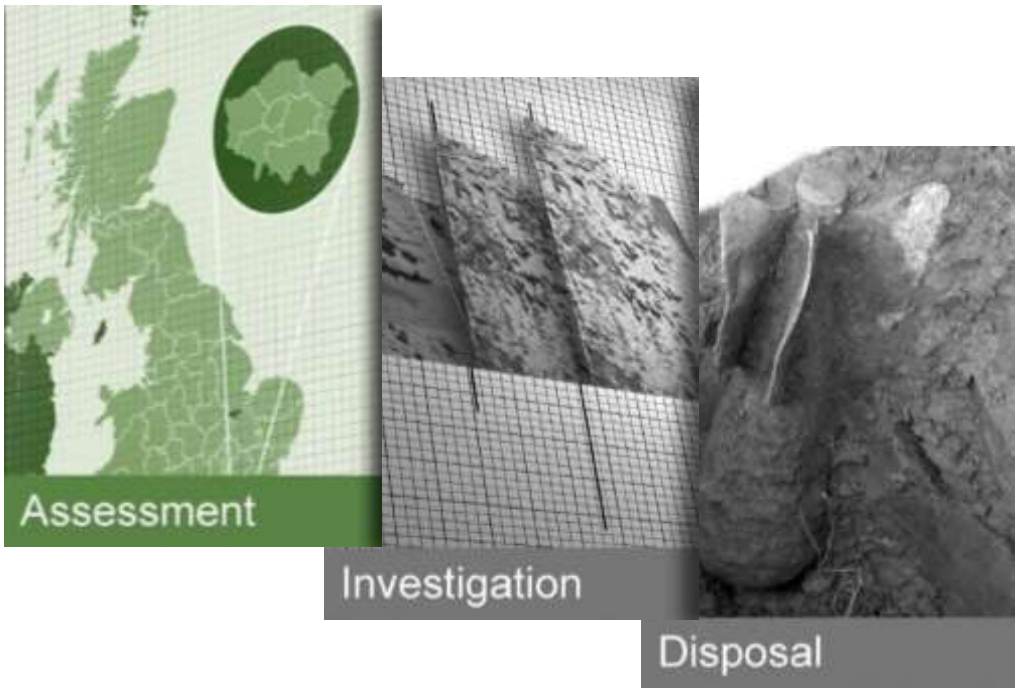
Permanent land drainage and/or discharge consents obtained by BAM Nuttall during the contract must be transferred (along with any liabilities) to the client on substantial completion or handover of the works

6. 0 References

CIRIA C648 – *Control of water pollution from linear construction projects.*
CIRIA C532 – *Control of water pollution from construction sites.*
EA/SEPA guidance note PPG 4 – *Treatment and disposal of sewage where no foul sewer is available*
EA/SEPA guidance note PPG 5 – *Works or maintenance in or near water*
EA/SEPA guidance note PPG 20 – *Dewatering of underground ducts and chambers*
BAM Nuttall procedure NP4: *Plant*
BAM Nuttall procedure NP27.1: *Water Management*
BAM Nuttall procedure NP27.2: *Oil storage and refuelling.*
BAM Nuttall guidance EG02: *Guidance on oil storage.*
BAM Nuttall form EF01: *Water monitoring and maintenance record.*
BAM Nuttall form *EF03: Permit to pump.*
BAM Nuttall form SF508.

These documents are available from TI One stop and the BAM Nuttall Intranet.

zeticaUXO



Northern Gateway, Manchester - UXO Desk Study & Risk Assessment

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UXO DESK STUDY & RISK ASSESSMENT

Northern Gateway, Manchester

EXECUTIVE SUMMARY

Zetica Ltd was commissioned by Arup on behalf of FEC to carry out an Unexploded Ordnance (UXO) Desk Study and Risk Assessment for an area of approximately 170 hectares (ha) in Collyhurst, Manchester ('the Site').

The aim of this report is to gain a fair and representative view of the UXO hazard for the Site and its immediate surrounding area in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'.

Records indicate that during World War Two (WWII) 19No. High Explosive (HE) bombs, 1No. Parachute Mine (PM) and Incendiary Bombs (IBs) fell on the Site.

The heaviest bombing was concentrated towards the south-western part of the Site, where significant damage was caused in the NOMA and Angel Meadow area. This part of the Site is assigned a moderate UXO hazard level due to the potential for the damage to have masked the impact of an Unexploded Bomb (UXB).

The bombing density across the remainder of the Site was low and no other significant military activity has been identified on the Site. The remainder of the Site is assigned a low UXO hazard level.

Given this, it is considered that the UXO hazard level on the Site can be zoned from low to moderate, as shown in the accompanying Figure, reproduced as Figure 8 in the main report.

Figure	UXO hazard zone plan of the Site

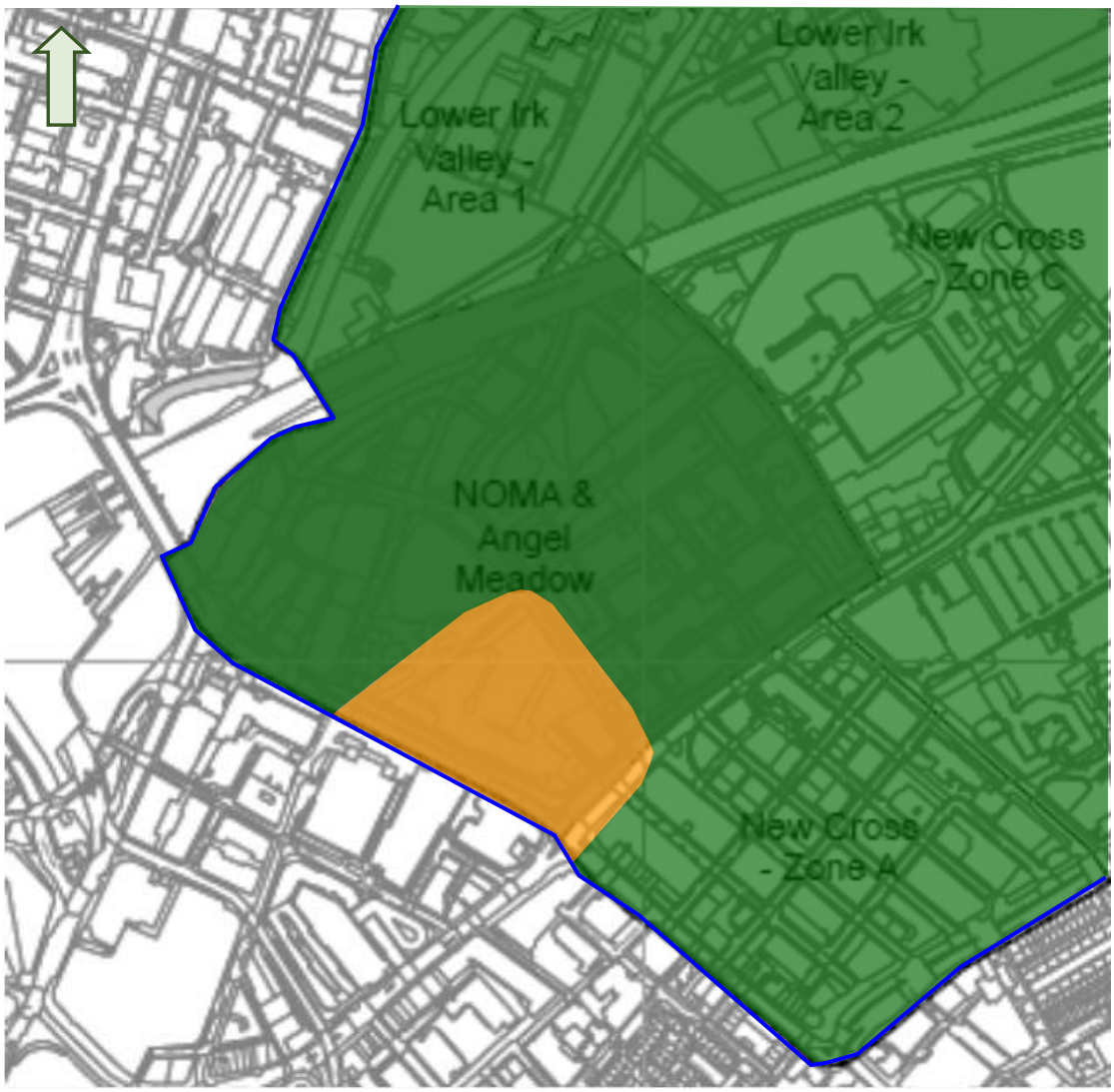


Source: Client *Not to Scale*

Legend					
	Very Low		Low		Moderate
	High		Very High		Site boundary

The Figure below, reproduced as Figure 9 in the main report, provides a more detailed extract of the moderate UXO hazard zone.

Figure	Extract of UXO hazard zone plan showing moderate hazard area



Source: Client *Not to Scale*

Legend					
	Very Low		Low		Moderate
	High		Very High		Site boundary

Where post-WWII construction has removed existing geological materials the UXO hazard will be mitigated within the footprint and depth of that construction. Outside of the footprint of these construction areas, between piles and below shallow raft foundations, the UXO hazard level remains unchanged to the depth of the likely maximum bomb penetration.

The main findings of the report are summarised below.

- No records of bombing or military activity on the Site during World War One (WWI) have been found.

- During WWII there were several strategic targets on the Site, including gas works, major transport infrastructure and industries engaged in the war effort.
- Records have been found indicating that 19No. HE bombs, 1No. PM and IBs fell on the Site during WWII. 2No. of the HE bombs were recorded as UXB.
- For the geology of the Site, estimated average bomb penetration depths vary between 4.0m and 8.5m, depending on the weight of the bomb.
- No records of any significant post-WWII military activity on the Site have been found.

The Table below, reproduced as Table 4 in the main report, provides a UXO risk assessment for potential work on the Site.

Further details on the methodology for the risk assessment are provided in Section 10.1 of the main report.

Table UXO risk assessment for the Site

Hazard Zone	Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
Moderate	UXB	Shallow Excavations	2	2	4	2	5	10	Moderate
		Deep Excavations	3	2	6	3	5	15	Moderate
		Piling/Boreholes	2	3	6	3	4	12	Moderate
	Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
		Deep Excavations	1	1	1	1	4	4	Low
		Piling/Boreholes	1	1	1	1	3	3	Low
Low	UXB	Shallow Excavations	1	1	1	1	5	5	Low
		Deep Excavations	1	1	1	1	5	5	Low
		Piling/Boreholes	1	1	1	1	4	4	Low
	Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
		Deep Excavations	1	1	1	1	4	4	Low
		Piling/Boreholes	1	1	1	1	3	3	Low

PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)

Shallow Excavations defined as <1.0m below ground level (bgl).

Risk Mitigation Recommendations

To ensure that the UXO risk is reduced to As Low As Reasonably Practicable (ALARP) the following mitigation is advised:

Low Risk

Excavations

Where a low risk of UXO encounter is anticipated, industry good practice is to raise the awareness of those involved in excavations so that in the unlikely event that a suspect item is discovered, appropriate action is taken. This can be achieved through UXO awareness briefings to site staff.

Boreholes/Piles
Clearance certification for borehole or pile locations is considered prudent only if a zero tolerance to risk is adopted. Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.
Moderate Risk
Excavations
UXO Awareness Briefing It is important to raise the awareness of those involved in excavations (as per low risk). **EOC Engineer Supervision** It is recommended that an Explosive Ordnance Clearance (EOC) Engineer supervises during any excavation works. The EOC Engineer will carry out a visual assessment on any suspect items uncovered and classify them as potential UXO or other material.
Boreholes/Piles
Clearance certification for any borehole or pile locations is considered essential. This involves the advancement of a magnetometer into the ground at the proposed location of a borehole or pile, enabling detection of ferrous metal targets such as UXB. The survey should be carried out to either the maximum bomb penetration depth or maximum piling/drilling depth, whichever is shallower. There are two main systems available:- **MagDrill** – this is a system that is suitable for working with ground investigation drillers. It allows a magnetometer to be lowered into the borehole to ensure the route is clear of potential UXB. This saves the mobilisation of a separate drilling or probing rig. The advantage of MagDrill is that a more robust drilling technique can be used for challenging ground conditions. **MagCone** – this is a Cone Penetration Testing (CPT) based system that facilitates the pushing of a magnetometer into the ground at the proposed location of a pile. MagCone is suitable for cohesive/loose soils and has a much higher speed of operation compared to MagDrill. It should be noted that where dense soils or buried obstructions are encountered, MagCone is unlikely to be able to penetrate to the required depth. Typical radius of detection should be approximately 1.0m for a 50kg bomb until site conditions are confirmed. Assuming no objects comparable to the UXB detection range are identified, then the borehole or pile position can be considered clear of UXB. Any identified ferrous anomalies at the borehole or pile location may need to be investigated, or the position can be relocated.

It should be noted that in Made Ground or close to buried/adjacent structures, effective UXB detection is compromised due to geophysical noise.

Table 5 in the main report gives recommended actions in relation to the potential UXO risk level and the anticipated Site activity.

Further advice on the mitigation methods can be provided by Zetica on request.

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UXO DESK STUDY & RISK ASSESSMENT

Northern Gateway, Manchester

Note: To aid the reader of this report, Zetica has colour coded each paragraph. Paragraphs with black text on a white background are paragraphs that provide site-specific information or information specifically researched as part of this project.

Paragraphs in a dark green text with a green background are paragraphs containing background information or explanations which may appear as standard text in all similar reports.

1 INTRODUCTION

1.1 Project Outline

Zetica Ltd was commissioned by Arup on behalf of FEC to carry out an Unexploded Ordnance (UXO) Desk Study and Risk Assessment for an area of approximately 170 hectares (ha) in Collyhurst, Manchester ('the Site').

The aim of this report is to gain a fair and representative view of the UXO hazard for the Site and its immediate surrounding area in accordance with the Construction Industry Research and Information Association (CIRIA) C681 'Unexploded Ordnance (UXO), a Guide for the Construction Industry'.

This hazard assessment includes:

- Likelihood of ordnance being present.
- Type of ordnance (size, filling, fuze mechanisms).
- Quantity of ordnance.
- Potential for live ordnance (UXO).
- Probable location.
- Ordnance condition.

It should be noted that some military activity providing a source of UXO hazard may not be readily identifiable and therefore there cannot be any guarantee that all UXO hazards within the Site have been identified in this report.

1.2 Historical Information

With most locations, the potential presence of UXO as a result of enemy action, unauthorised disposal or unrecorded military activity can never be totally discounted.

Detailed records of military activity are rarely released into the public domain. Even when military information is made public there may be gaps in the records because files have been lost or destroyed.

Records for periods such as WWII are only as detailed and accurate as the resources and working conditions would allow at the time. Densely populated areas tend to have a greater number of records than rural areas. Such records may be inaccurate due to the confusion surrounding continuous air raids.

Recent research indicates that England alone had 17,434No. recorded defence sites, of which 12,464No. were classified as defensive anti-invasion sites. The precise locations of many of these sites are still to be identified, illustrating the scale of the problem when establishing potential risks from limited historical data.

1.3 Sources of Information

Zetica Ltd researched the military history of the Site and its surrounding area utilising a range of information sources. The main sources of information are detailed in the following sections and referenced at the end of this report.

1.3.1 Zetica Ltd Defence Related Site Records

Zetica Ltd's in-house records were consulted, including reference books and archived materials from past work in the region. Relevant documents have been cited within the bibliography of this report.

1.3.2 Zetica Ltd Bombing Density Records and Maps

Reference has been made to the Zetica Ltd bomb risk maps located on Zetica Ltd's website (http://zeticauxo.com/downloads-and-resources/risk-maps/).

1.3.3 Ministry of Defence and Government Records

Various government departments and units within the Ministry of Defence (MoD) were approached for information of past and present military activity in the area. These included the Home Office records of abandoned bombs.

1.3.4 Other Historical Records, Maps and Drawings

Numerous reference documents including historical maps, aerial photographs and drawings have been consulted from sources such as the National Archives, the US National Archives and Records Administration (NARA), Historic England and the Defence of Britain Project.

The British Geological Survey (BGS) was consulted for borehole information.

1.3.5 Local Authority Records

Information has been obtained from Manchester City Council.

1.3.6 Local Record Offices and Libraries

The Greater Manchester County Record Office, Manchester Central Library Archive and Manchester University provided information.

1.3.7 Local Historical and Other Groups

Local history groups and archaeological bodies were consulted, including the Manchester Regiment Forum.

1.4 Data Confidence Level

In general, there is a high level of confidence in the researched information sources used for this report.

It should be noted that there is a limited amount of historical aerial photography available covering the northern part of the Site. Other records (including bomb damage maps and air raid reports) have been used to assess the level of WWII bombing on this part of the Site.

2 THE SITE

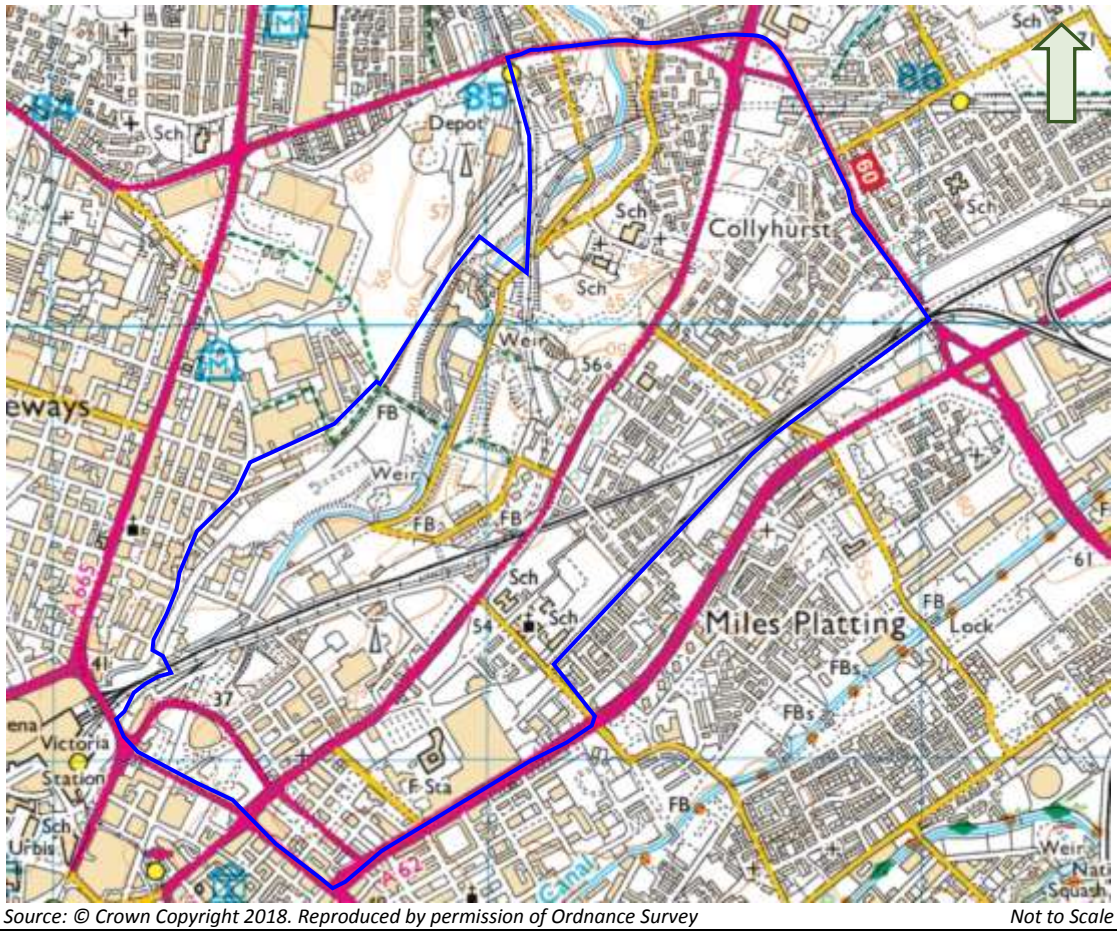
2.1 Site Location

The Site is centred on Ordnance Survey National Grid Reference (OSNGR) SJ 852995. It is located between the NOMA development and the Collyhurst district of Manchester, within approximately 2.2km northeast of the city centre.

The Site comprises a mixture of residential and commercial areas, streets, railway tracks, and open ground. It is bounded to the north and northeast by Queen's Street and to the southeast by railway tracks, New Allen Street and Oldham Road. The Site is bounded to the southwest by Swan Street and Miller Street, and to the northwest by Red Bank, Honey Street, open ground and railway tracks.

Figure 1 is a Site location map and Plate 1 is a recent aerial photograph of the Site.

Figure 1	Site location map



Source: © Crown Copyright 2018. Reproduced by permission of Ordnance Survey *Not to Scale*

Legend	Site boundary

Plate 1	Recent aerial photograph of the Site



Source: Google Earth *Not to Scale*

Legend	Site boundary

2.2 Proposed Works

It is understood that initial works on the Site will comprise intrusive ground investigations, including drilling boreholes to rockhead.

Future works on the Site may include further ground investigations, excavations and piling associated with the construction of residential townhouses and apartments.

2.3 Site History

The historical map of 1915 (Figure 2) shows that in the early 20th century the Site comprised a mixture of residential and industrial properties.

Industries on the Site included Union Bridge Iron Works, a rubber works, the Collyhurst Finishing Works, and general engineering works.

There was extensive transport infrastructure on the Site, including mainline railways, goods sheds and sidings.

The Rochdale Road Gas Works had been established on the south-western part of the Site.

Figure 2	Historical map, 1915

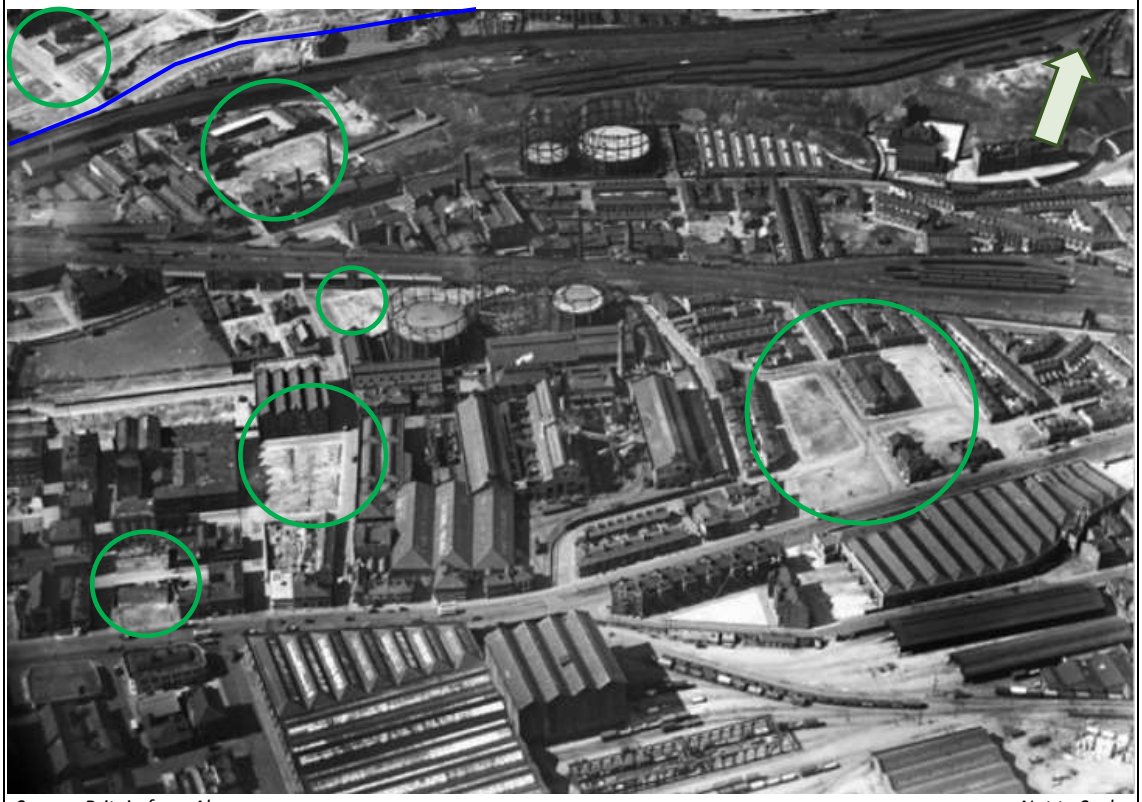


Source: © Crown Copyright 2018. Reproduced by permission of Ordnance Survey *Not to Scale*

Legend	Site boundary

Prior to WWII, several terraced housing developments on the Site were demolished. This is demonstrated in Plate 2, an aerial photograph dating from 1939.

Plate 2	Aerial photograph, 1939



Source: Britain from Above *Not to Scale*

Legend	Site boundary	Pre-WWII clearance

Further buildings were damaged and subsequently removed after being subjected to bombing during WWII.

The historical map of 1946 (Figure 3) shows that several areas on the Site had been cleared of buildings. The majority of the Site remained occupied by a mixture of residential and industrial premises, major transport infrastructure and gas works.

Figure 3	Historical map, 1946



Source: © Crown Copyright 2018. Reproduced by permission of Ordnance Survey *Not to Scale*

Legend	Site boundary

During the second half of the 20th century, significant redevelopment occurred on the Site. This included the demolition of remaining 19th century terraced housing and pre-WWII industrial works.

New residential developments were built on the north-eastern part of the Site and modern commercial premises were established on the south-western part of the Site. A completely new road layout was built on the Site.

Former quarries at Sand Street and Fitzgeorge Street became open land and playing fields.

Oldham Road Goods Station was closed and was sold for redevelopment in 1968.

These developments are shown in Plate 3, an aerial photograph dating from 2000.

Plate 3	Aerial photograph, 2000



Source: Google Earth *Not to Scale*

Legend	Site boundary

Since 2000 there has been some additional commercial and residential development on the Site, in addition to demolition of old industrial works (see Plate 1).

2.4 Pre-WWI Military Activity

No records of any significant pre-WWI military activity on or in close proximity to the Site have been found.

2.5 WWI Military Activity

No records of any significant WWI military activity on or in close proximity to the Site have been found.

During WWI an estimated 9,000No. German bombs were dropped over Britain. It was the first time that strategic aerial bombing had been used.

No records have been found indicating that the Site was bombed during WWI.

In response to the air raids, Anti-Aircraft (AA) guns were established. These were potential sources of Unexploded AA (UXAA) shells which could land up to 13km from the firing point, although more typically fell within 10km during WWI.

Records indicate that the Site was within range of 10No. static AA gun batteries during WWI. The nearest was located at Newton Heath (SJ 877996), approximately 1.7km east of the Site. This was armed with 1No. 18-pounder (-pdr) gun.

WWI military activity is not considered to provide a source of UXO hazard to the Site.

2.6 WWII Military Activity

Manchester was a strategically important industrial region and several heavy air raids occurred across the city. Details of recorded air raid incidents in the vicinity of the Site are provided in Section 3 and Appendix 1.

Numerous defensive and offensive military structures were built in the vicinity of the Site. These included lines of defence (Stop Lines), pillboxes, bombing decoys and AA guns. Further details are given in Section 4.

Other military establishments in the vicinity of the Site are described in Sections 5 to 7.

2.7 Post-WWII Military Activity

No records of any significant post-WWII military activity on or in close proximity to the Site have been found.

3 WWII BOMBING

Bombing raids began in the summer of 1940 and continued until the end of WWII. Bombing densities generally increased towards major cities or strategic targets such as docks, industrial premises, power stations and airfields.

The German bombing campaign saw the extensive use of both High Explosive (HE) bombs and Incendiary Bombs (IBs). The most common HE bombs were the 50kg and 250kg bombs, although 500kg were also used to a lesser extent. More rarely 1,000kg, 1,400kg and 1,800kg bombs were dropped.

The HE bombs tended to contain about half of their weight in explosives and were fitted with one or sometimes two fuzes. Not all HE bombs were intended to explode on impact. Some contained timing mechanisms where detonation could occur more than 70 hours after impact.

Incendiary devices ranged from small 1kg thermite filled, magnesium bodied bombs to a 250kg 'Oil Bomb' (OB) and a 500kg 'C300' IB. In some cases the IBs were fitted with a bursting charge. This exploded after the bomb had been alight for a few minutes causing burning debris to be scattered over a greater area. The C300 bombs were similar in appearance to 500kg HE bombs, although their design was sufficiently different to warrant a specially trained unit of the Royal Engineers to deal with their disposal.

Anti-Personnel (AP) bombs and Parachute Mines (PMs) were also deployed. 2No. types of anti-personnel bombs were in common use, the 2kg and the 12kg bomb. The 2kg bomb could inflict injury across an area up to 150m away from the impact, within 25m of this, death or fatal injury could occur.

PMs (which were up to 4m in length) could be detonated either magnetically or by noise/vibration. Anti-shipping parachute mines were commonly dropped over navigable rivers, dockland areas and coastlines. The Royal Navy was responsible for ensuring that the bombs were made safe. Removal and disposal was still the responsibility of the Bomb Disposal Unit of the Royal Engineers.

WWII bomb targeting was inaccurate, especially in the first year of the war. A typical bomb load of 50kg HE bombs mixed with IBs which was aimed at a specific location might not just miss the intended target but fall some considerable distance away.

It is understood that the local Civil Defence authorities in urban areas had a comprehensive system for reporting bomb incidents and dealing with any UXO. In more rural areas, fewer bombing raids occurred. It is known that ARP records under-represent the number and frequency of bombs falling in rural and coastal areas.

Bombs were either released over targets or as part of 'tip and run' raids where bomber crews would drop their bombs to avoid Anti-Aircraft fire or Allied fighter aircraft on the route to and from other strategic targets. Bombs dropped as a result of poor targeting or 'tip and run' raids on rural, river, marsh or coastal areas were often unrecorded or entered as 'fell in open country', 'fell in the sea' or 'fell in the river' and left little evidence of the fall.

3.1 Bombing in Manchester

Manchester's industrial conurbations and port made it a principal target for enemy bombers. The Luftwaffe possessed detailed target photographs of many industrial complexes from as early as 1937.

Air raids on Manchester began in August 1940 and continued until 1945. The heaviest raids on the city occurred between the 22nd and 24th December 1940, the 'Manchester Blitz', during which more than 400No. HE bombs and thousands of IBs were dropped.

More than 1,710No. HE bombs and 115No. PMs fell across the Manchester region during WWII. Bombing was concentrated on the city centre and in West Manchester, where the Salford Docks and major industrial works at Trafford Park attracted heavy raids.

Bombing densities generally decreased away from the city centre and far less damage was sustained by properties in these areas.

3.2 Strategic Targets

The presence of strategic targets significantly increased the likelihood of bombing within the local area. Airfields, docks, industrial facilities, transport infrastructure and anti-invasion defences were all targeted by Luftwaffe bombers. The inherent bombing inaccuracies at the time meant that areas surrounding the targets were often subjected to bombing.

Details of the main targets in the vicinity of the Site are described in the following Sections.

3.2.1 Commercial and Industrial Targets

The south-western part of the Site was located near the commercial centre of Manchester, a potential target.

Several metal works were located on the Site, including Union Bridge Iron Works, Acme Tin Stamping Works, and Thornton Street Iron and Copper Works.

Chemical industries on the Site included the Dantzick Street Rubber Works and Yew Tree Chemical Works.

Textile industries on the Site included Little Green Dye Works, Collyhurst Cotton Waste Mills, and Rockcliffe Cotton Mill. The mills were targeted due to the flammable nature of cotton, which when bombed would result in fires spreading to adjacent properties.

Engineering industries on the Site included Vauxhall Engineering Works and Red Bank Spring and Axle Works.

The Avro aircraft works at Newton Heath, within approximately 0.3km southeast of the Site, expanded significantly for wartime production. The Newton Heath works specialised in the development and manufacturing of parts for Lancaster bomber aircraft.

The Dunlop Rubber Company at Gaythorn, approximately 1.8km southwest of the Site, manufactured more than 28,000No. barrage balloons during WWII.

The Clayton Aniline Company works, approximately 2.4km east-southeast of the Site, manufactured explosive compounds for the military.

3.2.2 Public Utilities

Public utilities were frequently targeted by the Luftwaffe to disrupt power supplies to local industries.

Rochdale Road Gas Works was located on the Site.

Plate 4 is a Luftwaffe target photograph of Manchester, dated the 4th October 1939. It shows the Union Bridge Iron works (Target A) and the Rochdale Road Gas Works (Target B).

Plate 4	Luftwaffe target photograph of Manchester, 4th October 1939



Source: NARA *Not to Scale*

Legend	Site boundary

Miles Platting Gas Works were located approximately 1.2km southeast of the Site.

3.2.3 Manchester Ship Canal and Salford Docks

The Manchester Ship Canal and Salford Docks were located approximately 3.9km southwest of the Site. The Port of Manchester was Britain's second largest oil terminal during WWII and was responsible for storing and transporting a wide variety of goods used in the war effort.

From the Salford Docks, the River Irwell was canalised and ran into the centre of Manchester. This was an important route for transporting raw materials in and finished materials out of the city.

3.2.4 Transport Infrastructure

Transport infrastructure was frequently targeted to disrupt logistical supply lines.

Oldham Road Goods Station and its associated sidings and goods sheds were located on the Site.

The London, Midland, and Scottish Railway (LMSR) mainline into Manchester and several branch lines crossed the Site.

Red Bank Carriage Sidings were located on the Site, constructed on an elevated plateau. The sidings serviced the nearby Victoria Station.

Miles Platting Station was located on the north-eastern boundary of the Site.

Victoria Station was located approximately 0.1km southwest of the Site.

3.3 Bombing Density and Incidents

Table 1 gives details of the overall bombing statistics recorded for the local authority districts of the Site and surrounding districts. These were categorised as Rural Districts (RD), Urban Districts (UD), Municipal or Metropolitan Boroughs (MB) and County Boroughs (CB).

WWII bomb density levels are defined below:

<5 bombs per 405ha is a Very Low regional bombing density.

5-15 bombs per 405ha is a Low regional bombing density.

15-50 bombs per 405ha is a Moderate regional bombing density.

50-250 bombs per 405ha is a High regional bombing density.

>250 per 405ha is a Very High regional bombing density.

The Site was located in Manchester CB.

Table 1 Bombing statistics

Area	Bombs Recorded				
	High Explosive	Parachute Mines	Other	Total	Bombs per 405ha (1,000 acres)
Manchester CB	**712**	**18**	**7**	**737**	**27.0**
Stretford MB	456	64	0	520	147.3
Salford CB	406	29	16	451	86.7
Middleton MB	37	0	0	37	7.2
Chadderton UD	11	1	0	12	4.0

Note that Table 1 excludes the figures for IBs. Discrepancies between this list and other records, such as bomb clearance records, demonstrate that this data is likely to under-represent actual bombing.

The nearest recorded air raid incidents to the Site are described in the Section below. Appendix 1 provides details of further air raid incidents in the vicinity of the Site.

7th October 1940

1No. HE bomb fell on the junction of North Kent Street and Collyhurst Street, on the Site. This was recorded as an Unexploded Bomb (UXB).

1No. HE bomb fell on the corner of Teignmouth Street and Charlton Street, on the Site.

1No. HE bomb fell on the corner of Harrowby Street and Gay Street, on the Site.

1No. HE bomb fell near the school on Gorton Street, on the Site.

1No. HE bomb fell south of Gorton Street, on the Site.

1No. HE bomb fell near Collyhurst Inn, on the Site.

1No. IB fell on Rochdale Gas Works, on the Site.

5No. IBs fell on Dantzick Street, between Bilberry Street and Warford Street, on the Site.

IBs fell on Union Bridge Iron Works, on the Site.

IBs fell along Red Bank, adjacent to the western boundary of the Site.

22nd-24th December 1940

Manchester and Salford were heavily bombed (the 'Manchester Blitz'). In total 171No. bomber aircraft attacked Manchester and dropped over 400No. HE bombs and more than 30,000No. IBs.

The weights of the HE bombs dropped during the raid ranged from 50kg to 1,800kg. The nearest recorded incidents to the Site during these raids are described below.

1No. HE bomb fell on Style Street, on the Site.

1No. HE bomb fell on Crown Street, on the Site.

1No. HE bomb fell on Corporation Street, on the Site.

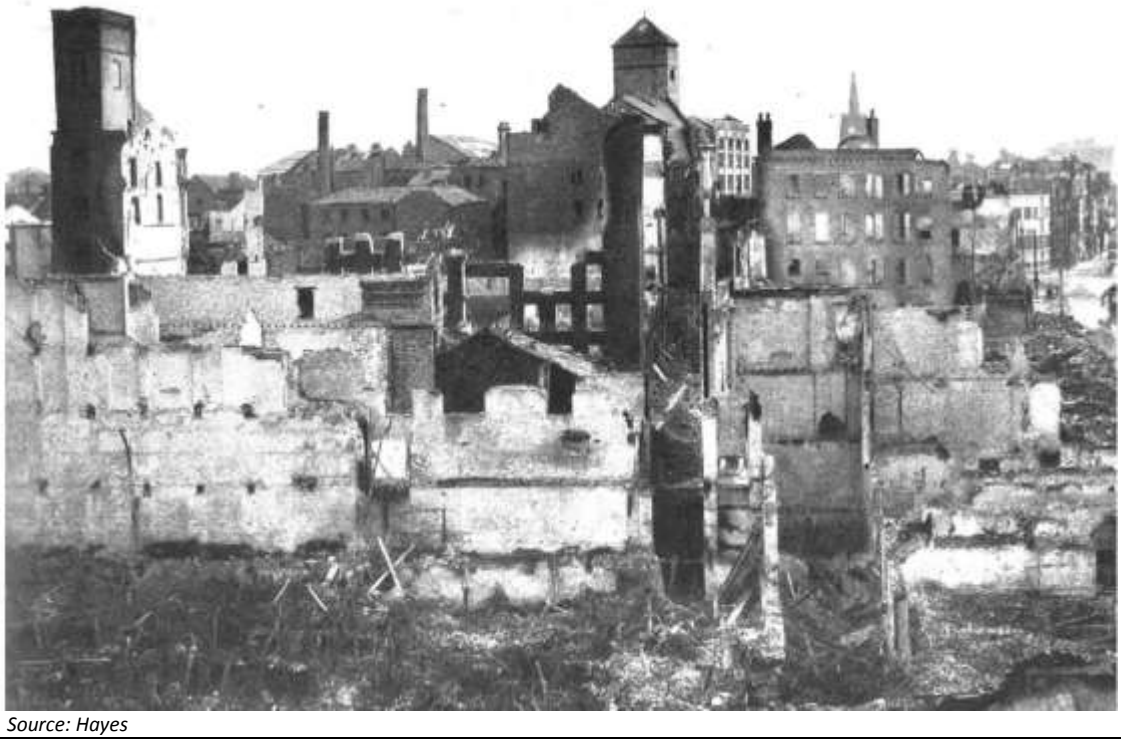
1No. HE bomb fell on Little Green Dye Works, on the Site.

1No. HE bomb fell on Cross Keys Street, on the Site.

1No. PM and IBs fell on Shudehill Mill, Miller Street, on the Site.

Plate 5 is a photograph showing the damage caused by the PM and IBs on the Site at Miller Street. This level of damage, characterised by burnt out buildings and extensive rubble and debris, could have masked the impact of a UXB.

Plate 5	Photograph of bomb damage at Miller Street, 23rd December 1940



Source: Hayes

1No. HE bomb fell on Crown Street, on the Site.

1No. HE bomb fell on Chapman Street, on the Site.

1No. IB fell on 23 Rochdale Road, on the Site.

1No. HE bomb fell on Preston Street, on the Site.

IBs fell on the corner of Miller Street and Rochdale Road, on the south-western boundary of the Site.

IBs fell on Queen's Road, adjacent to the north-eastern boundary of the Site.

1st June 1941

Approximately 110No. aircraft raided Manchester, dropping 42No. HE bombs and numerous IBs.

1No. HE bomb fell on the railway embankment near Honey Street, on the Site.

1No. HE bomb fell on open ground near Collyhurst Finishing Works, on the Site.

1No. HE bomb fell on the junction of Fitzgeorge Street and Keats Street, on the Site.

1No. HE bomb fell on the school on Gorton Street, on the Site.

IBs fell on Collyhurst Printing Works, on the Site.

IBs fell on the Cotton Waste Mills, Collyhurst Road, on the Site.

3No. IBs fell on Rochdale Road Gas Works, on the Site.

1No. IB fell near the Grapes Hotel, 236 Collyhurst Road, on the Site.

1No. IB fell on the corner of Dalton Street and Burton Street, on the Site.

12th October 1941

1No. HE bomb fell on the junction of Paley Street and Husband Street, on the Site.

1No. HE bomb fell on Percival Street, on the Site.

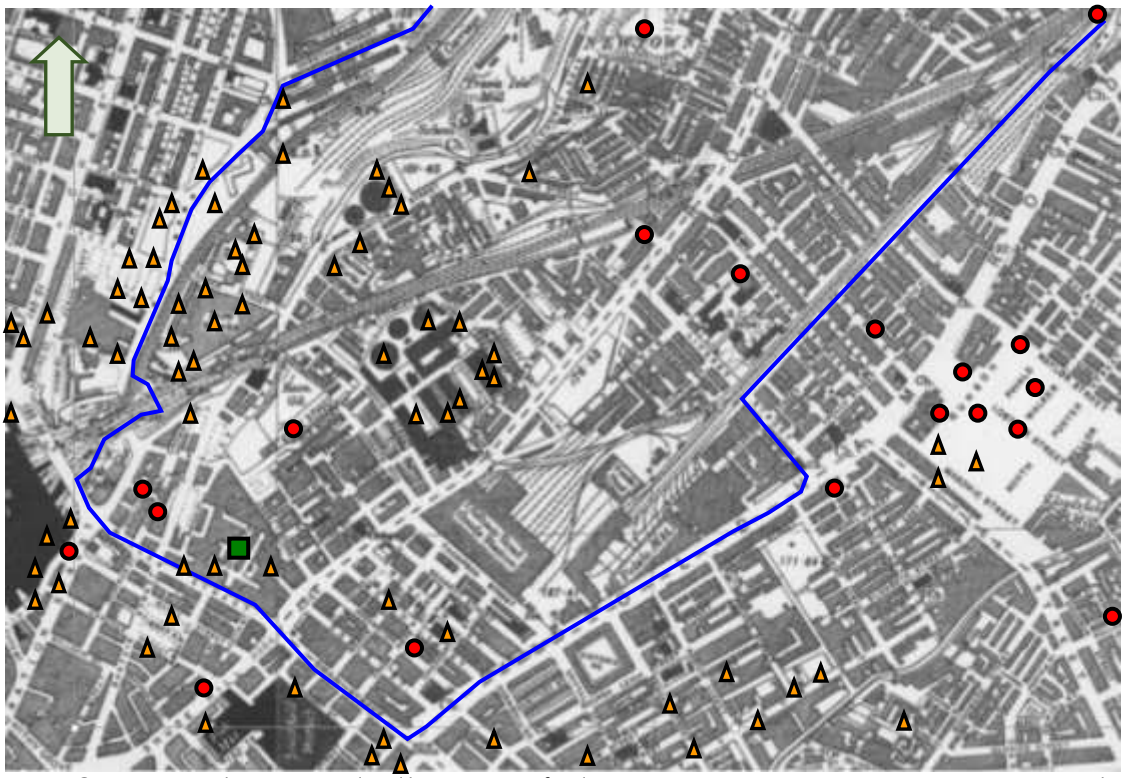
1No. HE bomb fell on railway sidings near Percival Street, on the Site.

It should be noted that during WWII, many UXB were mapped and subsequently removed as and when conditions and demands on Bomb Disposal teams allowed. Their removal was not always accurately recorded and sometimes records were later destroyed. In practice, most UXB were probably removed and only a much smaller number were actually registered as officially abandoned bombs.

Figure 4 is a map showing the approximate locations of bomb impacts in the immediate vicinity of the southern part of the Site. IBs shown are indicative of larger numbers of similar devices that fell within the given area. The map has been compiled from a number of different sources, including air raid incident reports, bomb damage maps and historical aerial photographs.

Note that air raid incident reports did not always record precise locations, often only indicating on which street or area a bomb fell.

Figure 4	Compiled bomb impact map for the vicinity of the southern part of the Site



Source: © Crown Copyright 2018. Reproduced by permission of Ordnance Survey *Not to Scale*

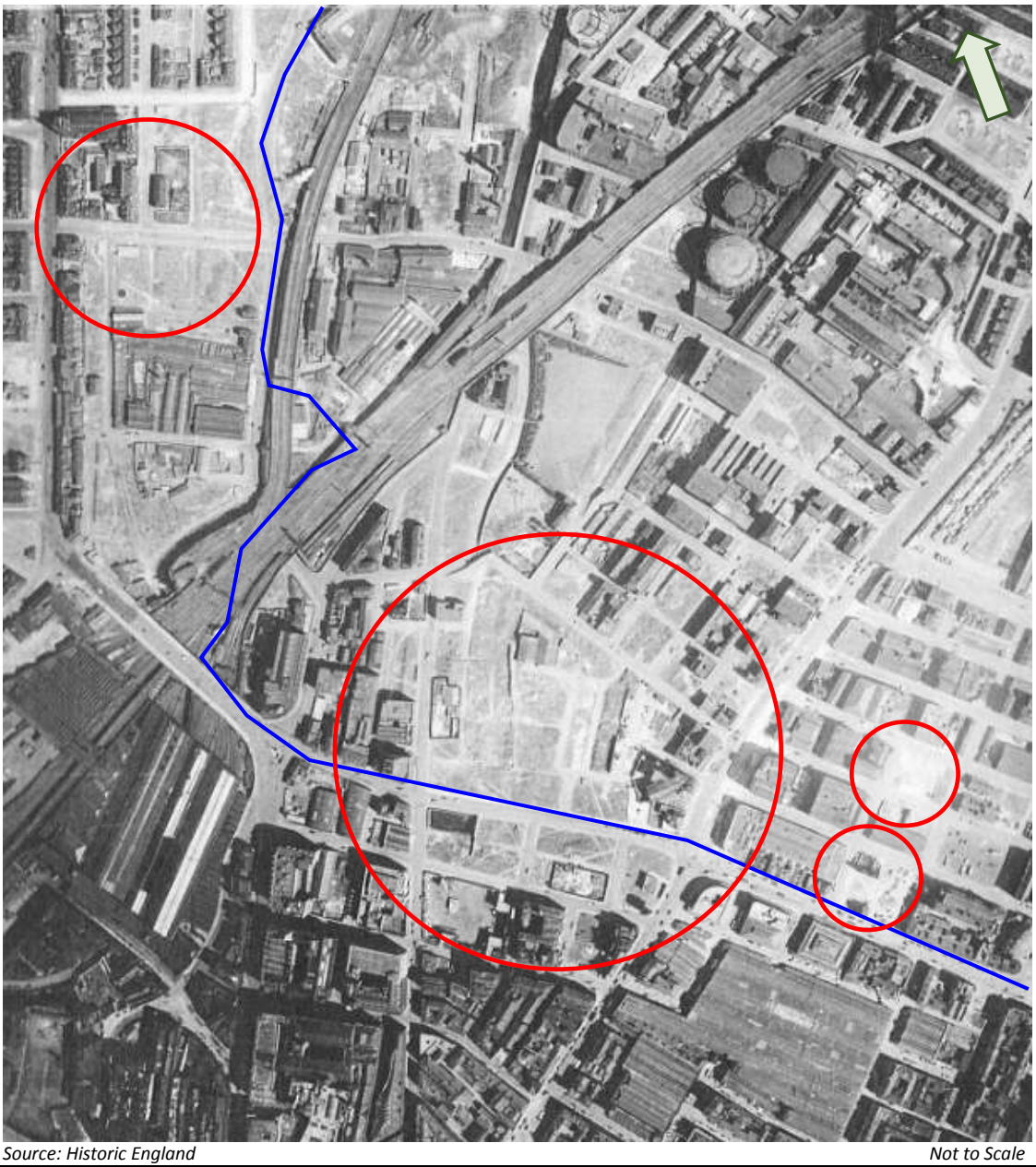
Legend	Site boundary	HE bomb	IB	UXB	PM

Plate 6 is an aerial photograph, dated the 7th May 1946, showing the southern part of the Site.

An extensive area of bomb damage is evident on the southern boundary of the Site, where a PM and IBs resulted in the destruction of buildings on Miller Street.

Other areas of demolished buildings can also be seen. Some of this relates to HE bomb and IB damage, although a comparison with pre-WWII aerial photography indicates that most is the result of planned slum clearance (see Plate 2).

Plate 6	Aerial photograph, 7th May 1946 (southern part of the Site)



Source: Historic England *Not to Scale*

Legend	Site boundary	Possible bomb damage

Figure 5 is an extract of the Manchester bomb damage map compiled at the end of WWII, on which the colouring denotes the severity of damage to buildings.

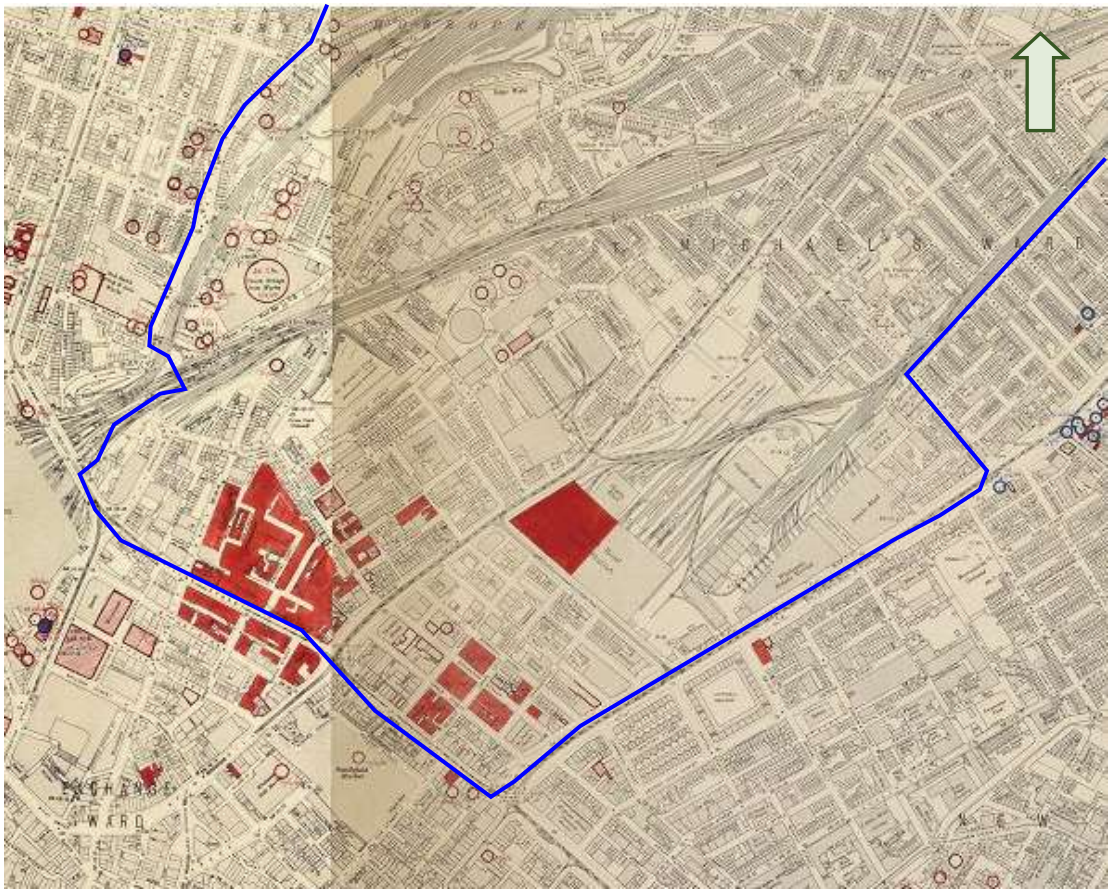
Dark red shading indicates severe damage or demolition and light red shading indicates minor damage.

Blue circles indicate recorded HE bomb impacts, red circles IBs and green circles PMs. It should be noted that not all bomb impacts for the Manchester area are recorded on the map.

The map confirms that the main concentration of bomb damage was on the southern boundary of the Site at Miller Street. Some more isolated areas of damage are recorded at Oldham Road Goods Station and to residential properties on the south-eastern part of the Site.

For the majority of the Site, no major damage is recorded.

Figure 5	Extract of Manchester bomb damage map (southern part of the Site)



Source: Manchester Archives *Not to Scale*

Legend	Site boundary

Figure 6 is a map showing the approximate locations of bomb impacts in the immediate vicinity of the northern part of the Site.

It demonstrates the low bombing density on this part of the Site.

Figure 6	Compiled bomb impact map for the vicinity of the northern part of the Site



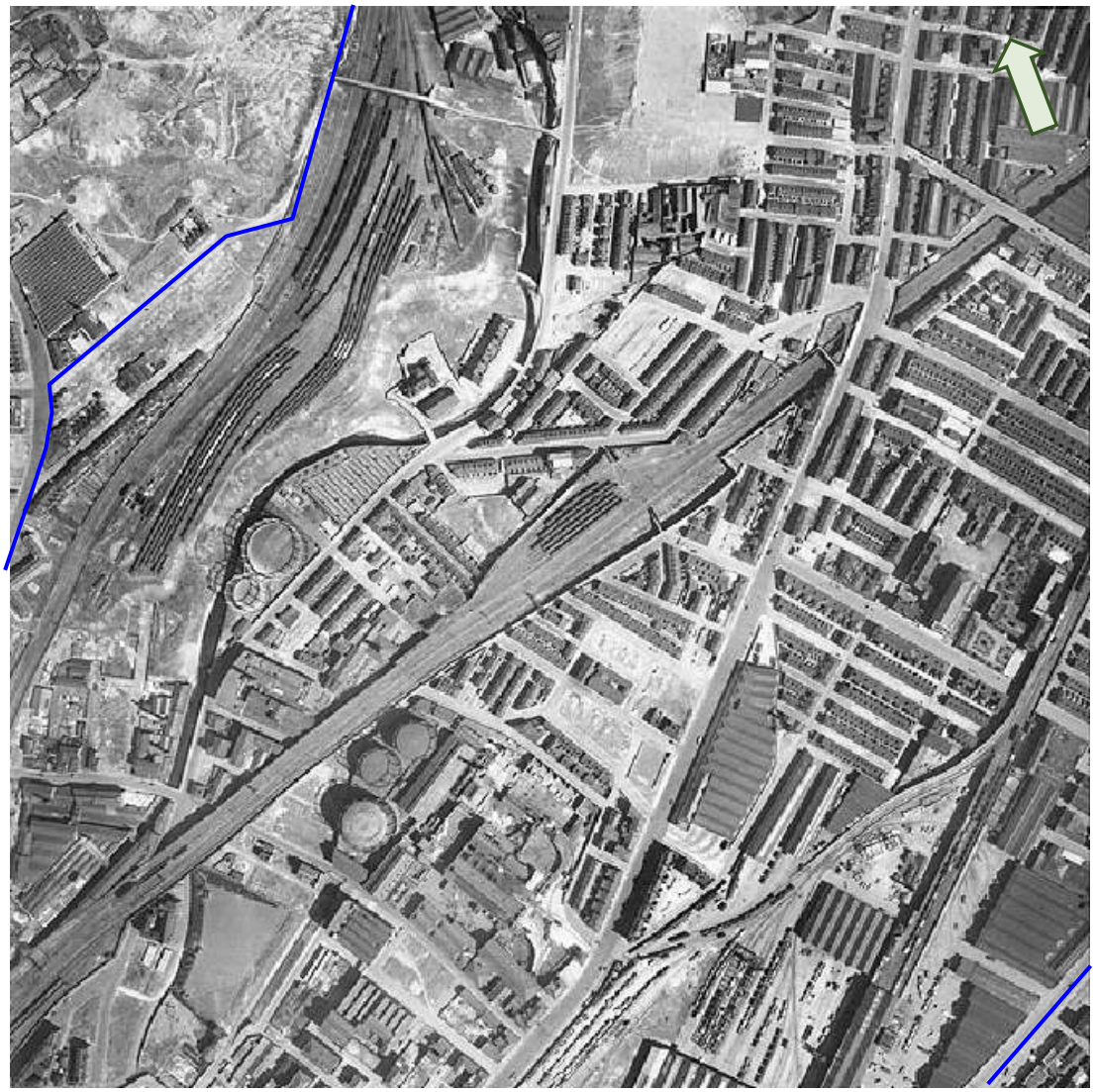
Source: © Crown Copyright 2018. Reproduced by permission of Ordnance Survey *Not to Scale*

Legend	Site boundary	HE bomb	IB	UXB

Plate 7 is an aerial photograph, dated the 7th May 1946, showing the central part of the Site.

Some areas of demolished buildings are evident, although this is considered to be the result of pre-WWII slum clearance.

Plate 7	Aerial photograph, 7th May 1946 (central part of the Site)



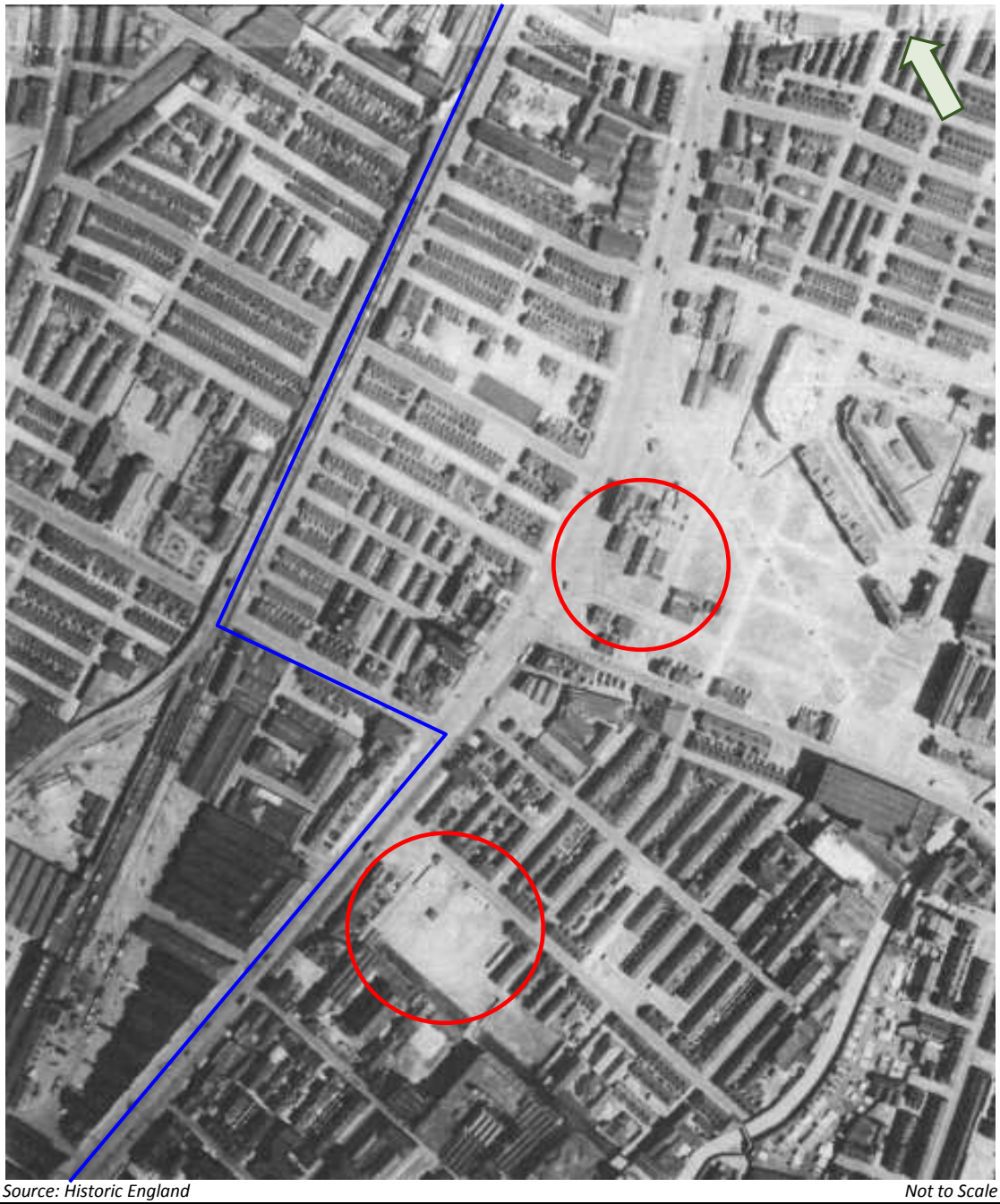
Source: Historic England *Not to Scale*

Legend	Site boundary

Plate 8 is an aerial photograph, dated the 7th May 1946, showing the eastern part of the Site.

Some isolated areas of possible bomb damage are evident, in addition to areas cleared of buildings pre-WWII.

Plate 8	Aerial photograph, 7th May 1946 (eastern part of the Site)



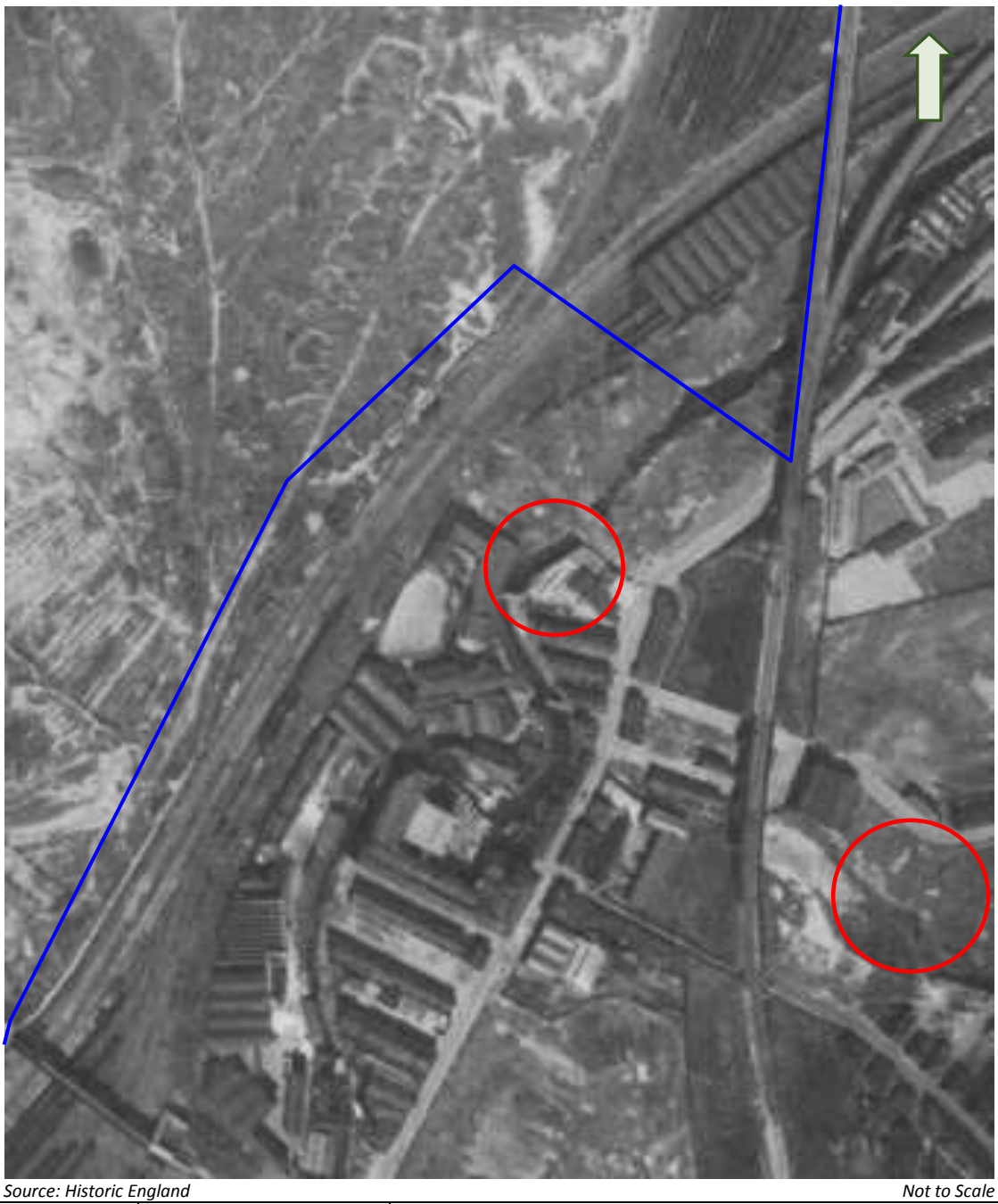
Source: Historic England *Not to Scale*

Legend	Site boundary	Possible bomb damage

Plate 9 is an aerial photograph, dated the 9th June 1953, showing the north-western part of the Site.

Some isolated areas of possible bomb damage are evident, in addition to areas cleared of buildings pre-WWII.

Plate 9	Aerial photograph, 9th June 1953 (north-western part of the Site)



Source: Historic England *Not to Scale*

Legend	Site boundary	Possible bomb damage

Figure 7 is an extract of the Manchester bomb damage map. No significant damage is recorded on the northern part of the Site.

Figure 7	Extract of Manchester bomb damage map (northern part of the Site)



Source: Manchester Archives *Not to Scale*

Legend	Site boundary

Potential UXO Hazard

Records indicate that 19No. HE bombs, 1No. PM and IBs fell on the Site during WWII. This represents a low bombing density for the Site, with the heaviest raids occurring to the southwest in Manchester city centre.

One extensive area of bomb damage is recorded on the southern boundary of the Site, where a PM and IBs destroyed several buildings during the 'Manchester Blitz'. Due to the intensity of the raid and the higher concentration of bombing towards the southern part of the Site, it is considered that this damage may have masked the impact of a UXB.

No extensive damage is recorded across the remainder of the Site, with only isolated damage caused by single bombs.

WWII bombing is considered to provide a possible source of UXO hazard to the NOMA and Angel Meadow area on the southern boundary of the Site.

3.4 Geology and Bomb Penetration Depths

It is important to consider the geological materials present on the Site at the time that a bomb was dropped in order to establish its maximum penetration depth. British Geological Survey (BGS) 1:50,000 Sheet 85, Manchester (Solid and Drift) and BGS borehole records were consulted.

The geology of the Site typically comprises Made Ground over Glacial Till (Diamicton), overlying either the Collyhurst Sandstone Formation or the Pennine Coal Measures Formation.

Table 2 provides an estimate of average maximum bomb penetration depths for the Site, assuming WWII ground conditions of 1m of Made Ground (modelled as gravel), over 3m of stiff clay, overlying more than 20m of weak rock.

Table 2 Estimated average maximum bomb penetration depths

Estimated average bomb penetration depths for anticipated geology		
Bomb Weight	50kg	4.0m
	500kg	8.5m

The estimated bomb penetration depths given in Table 2 is from the WWII ground level and are based on the following assumptions:

a) High level release of the bomb resulting in an impact velocity of 260m/s (>5,000m altitude).

b) A strike angle of 10 to 15 degrees to the vertical.

c) That the bomb is stable, both in flight and on penetration.

d) That no retarding units are fitted to the bomb.

e) That the soil type is homogenous.

A high altitude release of a bomb will result in ground entry at between 10° and 15° to the vertical with the bomb travelling on this trajectory until momentum is nearly lost. The bomb will then turn abruptly to the horizontal before coming to rest. The distance between the centre of the entry hole and the centre of the bomb at rest is known as the 'offset'. A marked lateral movement from the original line of entry is common.

Low-level attacks may have an impact angle of 45° or more, which will frequently lead to a much greater amount of offset movement during soil penetration.

4 WWII DEFENCES

4.1 Bombing Decoys

In order to draw enemy aircraft away from towns and other strategically important targets, a series of decoys were developed between 1940 and 1941.

They were estimated to have drawn at least 5% of the total weight of bombs away from their intended targets. Approximately 792No. static decoy sites were built at 593No. locations in England. In addition, numerous temporary and mobile decoys were deployed.

Several different types of decoy were devised:

- Night time dummy airfields (Q sites).
- Daytime dummy airfields (K sites).
- Diversionary fires to simulate successful bombing raids on airfields (QF sites), petroleum depots (P sites) and major towns and cities (Starfish or SF sites).
- Simulated urban lighting (QL sites).
- Dummy Heavy Anti-Aircraft (HAA) batteries, factories and buildings (C series).
- Mobile decoys representing 'hards' for troop embarkation (MQLs), tanks and other vehicles.

Machine gun emplacements and Light Anti-Aircraft (LAA) guns were used to prevent possible enemy landings at decoy airfields.

By their nature, decoy sites provide a potential risk from Unexploded Bombs (UXB), both within the decoy site boundary and in the surrounding areas.

The nearest bombing decoy was located at Reddish (SJ 912939), approximately 7.9km southeast of the Site.

Bombing decoys are not considered to provide a source of UXO hazard to the Site.

4.2 Anti-Aircraft Defences

Anti-Aircraft (AA) gun batteries were targeted by the Luftwaffe. They were also a source of Unexploded AA (UXAA) shells which could land up to 27km from the firing point during WWII, although more typically fell within 15km. These could be distributed over a wide area.

AA batteries present a potential source of UXO hazard as a result of the storage, use and disposal of ordnance associated with the armaments used. They may have a risk from small caches of ammunition buried locally to them. 3No. types of AA batteries existed:

- Heavy Anti-Aircraft (HAA) batteries of large guns designed to engage high flying bomber aircraft. These tended to be relatively permanent gun emplacements.
- Light Anti-Aircraft (LAA) weaponry, designed to counter low flying aircraft. These were often mobile and were moved periodically to new locations around strategic targets such as airfields.
- Rocket batteries (ZAA) firing 3" or 3.7" AA rockets with a maximum altitude of 5,800m and a ground range of 9km were also relatively permanent emplacements.

Many AA batteries were associated with searchlights and consequently 'visible' at night, providing clear targets to the Luftwaffe bombers and a potential for UXB.

During WWII the Site was within the range of guns deployed in the Manchester Gun Defended Area (GDA).

Table 3 is a list of recorded HAA and ZAA gun batteries within 10km of the Site.

Table 3 WWII HAA and ZAA batteries within 10km of the Site

Grid Reference	Serial No.	Location	Armament	Approximate Distance and Direction from Site
SD 851006	C/H16	Collyhurst	Unknown	On the Site
SD 848003	C	Manchester Central	Unknown	0.2km NW
SJ 825998	ZH4	Lower Broughton	Unknown	1.9km W
SJ 821993	L/H13	Lower Broughton	Unknown	2.0km W
SD 880024	B/H20	Moston	4 x 3.7” guns	2.9km NE
SD 890015	O/H22	Brookdale	Unknown	3.3km NE
SD 834037	A/H15	Heaton Park	4 x 4.5” guns	3.5km NW
SD 899000	O/H22	-	Unknown	3.9km E
SJ 861950	ZH6	Birchfields Park	ZAA rockets	4.0km SE
SJ 858948	R	Fallowfield	Unknown	4.1km SSE
SJ 837945	ZH3	Whalley Range	ZAA rockets	4.3km S
SD 801011	M/H8	Irlam	Unknown	4.4km WNW
SD 859055	N/H17	Middleton	Unknown	4.8km E
SD 817040	V/H9	Besses o’th Barn	Unknown	4.8km NW
SJ 862942	R/H18	-	Unknown	4.8km S
SD 915001	D/H24	Little Moss	Unknown	5.4km E
SJ 885948	E	Levenshulme	Unknown	5.4km SSE
SJ 831934	F/H14	Hough End Fields	4 x 3.7” guns	5.6km SSW
SJ 913977	P/H23	Ashton under Lyne	Unknown	5.7km ESE
SJ 888948	E/H21	Levenshulme	4 x 4.5” guns	5.7km SE
SJ 873933	-	Errwood Park	ZAA rockets	6.2km SE
SJ 806937	G/H10	Chorlton cum Hardy	Unknown	6.4km SW
SJ 778999	K/H7	Ellesmere	Unknown	6.4km W
SJ 801053	ZH1	Swinton Park	ZAA rockets	6.4km WNW
SJ 801053	W/H9	-	Unknown	6.7km NW
SJ 922964	C/H25	Guide Bridge	Unknown	7.1km ESE
SJ 779951	ZH2	Urmston	ZAA rockets	7.3km SW
SJ 772958	H/H6	Lostock	Unknown	7.7km SW
SJ 879910	Z/H19	Stockport	Unknown	8.4km SE
SJ 761950	T	Davyhulme	Unknown	8.9km SW
SJ 753993	U/H4	Eccles	Unknown	8.9km W
SD 849004	ZH5	Manchester Central	ZAA rockets	9.0m NW
SJ 808900	Y/H11	Baguley	Unknown	9.4km SSW
SJ 747979	J/H1	Barton	4 x 3.7’’ guns	9.6km W
SD 748022	R/H3	Roe Green	Unknown	9.8km WNW

It should be noted that the lack of official records of HAA batteries or armaments cannot be taken to imply their absence because many units were mobile and were moved around as operational requirements dictated.

4.2.1 Collyhurst HAA Battery

1No. HAA gun battery (Serial no. C/H16, Grid Ref. SD 851006) was located on the Site in Collyhurst.

Ammunition for HAA guns would have been kept in secure lockers, and any stores are likely to have been cleared following the end of WWII. The associated huts remain extant on historical mapping until the mid-1960s, when they were removed.

It is possible that personnel arming the battery and radar array were issued with Small Arms Ammunition (SAA) for defensive purposes. Given the subsequent redevelopment of the site as playing fields, it is considered unlikely that any discarded SAA would remain buried on the Site.

Collyhurst HAA battery is not considered to provide a significant source of UXO hazard to the Site.

4.2.2 AA Shell Incidents

The nearest recorded AA shell incidents to the Site during WWII are described below.

8th March 1941

1No. AA shell fell on Evan Bellhouse Co Saw Mill, Oldham Road, on the south-eastern boundary of the Site.

22nd March 1941

1No. AA shell fell on 166 Oldham Road, approximately 70m east of the Site.

Given the number of gun batteries in the surrounding area, the potential for a UXAA shell to have fallen unnoticed on the Site, whilst unlikely, cannot be discounted.

4.3 Barrage Balloons and Anti-Landing Obstacles

Balloon barrages were flown in many British towns and cities to protect against air raids. Their presence deterred low flying aircraft, making it more difficult for bombs to reach their intended targets. Barrage balloon sites can be a source of UXO as they were targeted by the Luftwaffe. They also often had a small explosive charge fitted with tilt fuzes attached approximately 50m from each end of the balloon cables and designed to detonate if the cables were hit by an aircraft.

Measures were also taken to prevent enemy aircraft landing in the event of invasion. Obstructions were constructed around airfields and on other open sites deemed fit for use as landing grounds. Solid obstructions (such as concrete blocks), posts or stakes, felled trees, haystacks, scaffolding with wire and trenching were the main measures used.

No records of any barrage balloons or anti-landing obstacles on or in close proximity to the Site have been found.

4.4 Anti-Invasion Defences

Defence structures are a potential source of UXB as they were especially targeted by low flying enemy aircraft, particularly during ‘tip and run’ raids which were common in industrialised regions.

These defences may also be associated with small caches of UXO in the form of small arms, used by the troops manning the emplacement.

The rapid advance of German Troops into France, Holland and Belgium after the start of WWII prompted the War Office to review the vulnerability of the UK to invasion and a decision was taken to begin work on a national plan of anti-invasion defences. Static defences were built to interrupt and delay the progress of any invading force.

Coastal defences were strengthened (the 'Coastal Crust'). These defences included barbed wire entanglements and minefields, which were often combined to give defence in depth.

Inland, lines of defence structures were constructed along 'Stop Lines' in order to impede enemy progress for long enough to allow mobile defending forces to counter-attack.

Stop Lines included the fortification of key 'centres of resistance', such as river crossings and important road or rail junctions that could seriously hamper the enemy's advance across country. Bridges were mined for demolition and tank traps installed.

Stop Lines were further integrated into a network of fortified nodal points and 'Anti-Tank (AT) Islands'.

No records of any anti-invasion defences on or in close proximity to the Site have been found.

4.5 Pillboxes, Mortar and Gun Emplacements

Defences also included spigot mortar positions and gun emplacements.

Spigot mortars, also known as Blacker Bombards, were used primarily in an anti-tank role at road blocks or to defend airfields. Typically they fired a 20 pound (lb) HE mortar bomb. The fixed positions, in weapons pits with ammunition lockers, were frequently positioned near pillboxes.

Spigot mortar positions could be either fixed or mobile.

No records of any gun emplacements on or in close proximity to the Site have been found.

Pillboxes provide a potential UXO hazard both from the storage, use and disposal of ordnance associated with them and from UXB because they were targeted by enemy aircraft.

Pillboxes were common along Stop Lines, perimeters of airfields, potential land invasion sites and around important civil sites. Several different designs existed including Seagull Trenches (semi-buried structures), Alan Williams and Tett Turrets (small prefabricated pillboxes). Fortified sites, buildings or loop-holed walls also functioned as pillboxes.

No records of any pillboxes on or in close proximity to the Site have been found.

4.6 Home Guard and Auxiliary Units

Local Defence Volunteers (LDV) units, later known as the Home Guard, were located in all cities, towns and large villages. Anti-invasion defences were to be defended by the Home Guard and regular Army troops for as long as possible in the event of an invasion. The troops were issued with 'No Withdrawal' orders.

Important elements of the ordnance supply for the use of the Home Guard included substantial supplies of Mills bombs (fragmentation grenades) and Self Igniting Phosphorus (SIP) grenades as well as machine gun and small arms ammunition.

Records of Home Guard activities and related sites are rarely preserved. Storage and disposal of munitions by the Home Guard was poorly documented and surplus supplies were either buried or dumped in lakes and ponds. Given the irregular nature of this activity, the possibility of items of UXO being discovered at any locations occupied or used for training by the Home Guard can never be totally discounted.

In addition to the regular Home Guard, Auxiliary Units existed which were made up of guerrilla troops trained in sabotage and assassination in case of invasion. Sites used by these Units were Top Secret and many locations are still unknown.

During WWII, several units of the Home Guard were active in Manchester, including the 49th Lancashire (Manchester) and 50th (Manchester and Ancoats) Battalions.

It is known that the Home Guard manned the HAA batteries in the Manchester area.

The Home Guard are recorded as having trained with live ammunition on Clayton Vale, approximately 1.8km southeast of the Site.

No Auxiliary Units are recorded as being active in the Manchester area.

Home Guard and Auxiliary Unit activity is not considered to provide a source of UXO hazard to the Site.

4.7 Minefields and Mined Locations

Minefields were laid along the coast, in estuaries and along the banks of major rivers to deter infantry invasion. Strategic points such as bridges and gaps in cliffs were mined to impede enemy advance. Most of the mined locations in the UK have been cleared and the risk of finding UXO in these areas is considered to be low.

No records of any minefields or mined locations on or in close proximity to the Site have been found.

5 MILITARY AIRFIELDS

Military airfields offer the potential for significant UXO hazards due to the use, storage and disposal of ordnance and as a result of enemy bombing during WWI and WWII.

Airfields active during WWII were targeted by the Luftwaffe, providing a potential source of UXB on the airfield.

As bombing accuracy was so poor during WWII, it is likely to find UXB in the surrounding areas. Aircraft crashes are also associated with operational airfields.

No records have been found indicating that any military airfields were located on or in close proximity to the Site.

Between 1918 and 1924 an aerodrome was operational at Alexandra Park (SJ 835950), approximately 4.2km south of the Site.

This was used as a testing station for aircraft produced at the Avro works at Trafford Park, including Avian, Cadet, Tutor and Anson types. The airfield closed in 1924, the buildings were demolished and the area was converted into a public park.

During WWII there were no military airfields within 10km of the Site.

Military airfields are not considered to provide a source of UXO hazard to the Site.

5.1 Aircraft Crashes

Aircraft crash sites are a known UXO hazard. The MoD advises that if crashed aircraft are found, the safest policy is to leave them alone where possible. Unless disturbed there is no statutory requirement for the MoD to clear such sites.

No records of any military aircraft crashes on or in close proximity to the Site have been found.

6 EXPLOSIVES AND MUNITIONS ESTABLISHMENTS AND DEPOTS

Explosives and munitions manufacturing or storage sites offer a particularly high risk from both explosive substances and UXO. Standard procedures of explosive/ordnance disposal through burial or burning means that explosive and UXO hazards will be present in some areas of such establishments.

In addition, UXB hazards may be present as a result of enemy bombing during WWI and WWII.

6.1 Explosives and Ordnance Factories

No records of any explosives or ordnance factories on or in close proximity to the Site have been found.

During WWI, the Manchester Corporation's tram depot, approximately 2.1km south of the Site, was converted into a National Shell Factory (NSF), which operated between 1916 and 1918. This was engaged in the production of machined shell casings.

The Clayton Aniline Company works, approximately 2.4km east-southeast of the Site, was established in the late 19th century to manufacture dyestuffs. During WWI, the works manufactured explosives, including TNT. During WWII, the works manufactured explosive additives, such as Centralite No. I, and boosting agents for high octane aviation fuel.

In 1914, M. N. Morris and Co Ltd Explosives Factory was opened at West Gorton, approximately 2.7km south-southeast of the Site. It was nationalised in 1915 and continued to produce explosive compounds, including synthetic phenol, throughout WWI.

Explosives and ordnance factories are not considered to provide a source of UXO hazard to the Site.

6.2 Munitions Stores

Local ammunition caches would have been present near to defended road blocks, pillboxes, HAA and LAA sites. Most of those associated with the anti-invasion sites are understood to have been cleared.

No records of any munitions stores on or in close proximity to the Site have been found.

6.3 Informal Munitions Depots

Informal munitions depots, often made by requisitioning roadside lay-bys or parks. Other informal munitions depots were commonly located in areas of woodland or on train wagons along sidings in marshalling yards.

No records of any informal munitions depots on or in close proximity to the Site have been found.

6.4 Munitions Disposal Areas and Bomb Cemeteries

Munitions disposal areas were often made by requisitioning open areas of land, usually away from habitation. Marshland, beaches or sand dunes were frequently used for this purpose. Disposal of munitions was carried out in many different ways, ranging from destruction to burial. Full records were not necessarily maintained for these locations, and so they can potentially be a source of UXO.

No records of any official munitions disposal areas or bomb cemeteries on or in close proximity to the Site have been found.

7 FIRING RANGES AND MILITARY TRAINING AREAS

By their nature, firing ranges and military training areas represent a potential source of UXO due to associated training activities. The training will involve both practice and live munitions and will offer a significant risk from a very wide range of potential UXO.

7.1 Small Arms Ranges

Small arms ranges (such as rifle ranges) and close combat ranges (such as mortar and grenade ranges) are likely to provide a significant source of UXO. It should be noted that even on small arms ranges, larger munitions such as mortars or grenades cannot be discounted.

No records of any small arms ranges on or in close proximity to the Site have been found.

7.2 Artillery Ranges

Artillery ranges will have utilised a wide range of munitions, predominantly shells, although close combat munitions such as mortars, or larger munitions such as bombs, cannot be discounted.

No records of any artillery ranges on or in close proximity to the Site have been found.

7.3 Bombing Ranges

Bombing ranges will have primarily used bombs, although other munitions such as shells and close combat munitions such as mortars cannot be totally discounted.

No records of any bombing ranges on or in close proximity to the Site have been found.

7.4 Training Areas

Training areas will have primarily used blank ammunition or practice shells in 'dry' areas, although live munitions such as shells and close combat munitions such as mortars cannot be discounted in any training area.

No records of any military training areas on or in close proximity to the Site have been found.

8 EXPLOSIVE ORDNANCE CLEARANCE ACTIVITIES

Official UK bombing statistics have been compiled from both British and German sources. There were differences in the way the figures were originally reported and collated which has led to discrepancies in the summary data.

Based on data from 1939 to 1945, War Office statistics indicate that 200,195No. HE bombs exploded within Great Britain. Additionally, 25,195No. HE bombs (representing 11%) were recorded as UXBs. However, records from the Royal Engineers who were responsible for bomb disposal at the time indicate that as of 27th February 1946 upwards of 45,000No. UXBs were disposed of.

On average 8.5% UXBs later self-exploded. In some cases the bombs had delayed action fuzes or were never intended to explode, their purpose being to cause inconvenience and fear.

Given the discrepancy in records and the fact that UXBs are still being found unexpectedly, it is clear that the original figures are understated and provide only an approximation of the number of potential UXBs in the UK.

War Office statistics also show that between October 1940 and May 1941 most of the UXBs (93%) were either 50kg or 250kg. It should be noted that details of the recovery and the size of the UXB were not always accurately reported.

The larger WWII UXBs are often difficult to recover due to both penetration depths and the presence of two or more fuzes, combined with more sensitive fillings of explosive mixtures including Amatol and Trialen.

8.1 Abandoned Bombs

No records of any officially abandoned bombs on the Site have been found.

8.2 EOC Tasks

Zetica Ltd holds records showing that the following post-WWII EOC tasks have been undertaken in the vicinity of the Site.

3rd April 2007

1No. unexploded mortar shell was found on a construction site on Cambridge Street, approximately 1.5km southwest of the Site.

8th October 2007

1No. UXB (type unspecified) was found on a construction site on Middlewood Street, Salford, approximately 1.9km southwest of the Site.

24th October 2018

1No. unexploded tank cartridge was found on a building site on Quay Street, near the River Irwell, approximately 1.3km southwest of the Site.

The MoD has provided no additional information on official EOC tasks on the Site.

9 UXO HAZARD ASSESSMENT

9.1 UXO Hazard Level

The definitions for the levels of UXO hazard are provided below.

Definitions of UXO Hazard Level for a Site

Hazard Level	Definition
Very Low	There is positive evidence that UXO is not present, e.g. through physical constraints or removal.
Low	There is no positive evidence that UXO is present, but its occurrence cannot be totally discounted.
Moderate	There is positive evidence that ordnance was present and that other uncharted ordnance may be present as UXO.
High	There is positive evidence that UXO is present.
Very High	As high, but requires immediate or special attention due to the potential hazard.

Records indicate that during WWII 19No. HE bombs, 1No. PM and IBs fell on the Site.

The heaviest bombing was concentrated towards the south-western part of the Site, where significant damage was caused in the NOMA and Angel Meadow area. This part of the Site is assigned a moderate UXO hazard level due to the potential for the damage to have masked the impact of a UXB.

The bombing density across the remainder of the Site was low and no other significant military activity has been identified on the Site. The remainder of the Site is assigned a low UXO hazard level.

It is considered that the UXO hazard level on the Site can be zoned from low to moderate, as shown in Figure 8.

Figure 8	UXO hazard zone plan of the Site

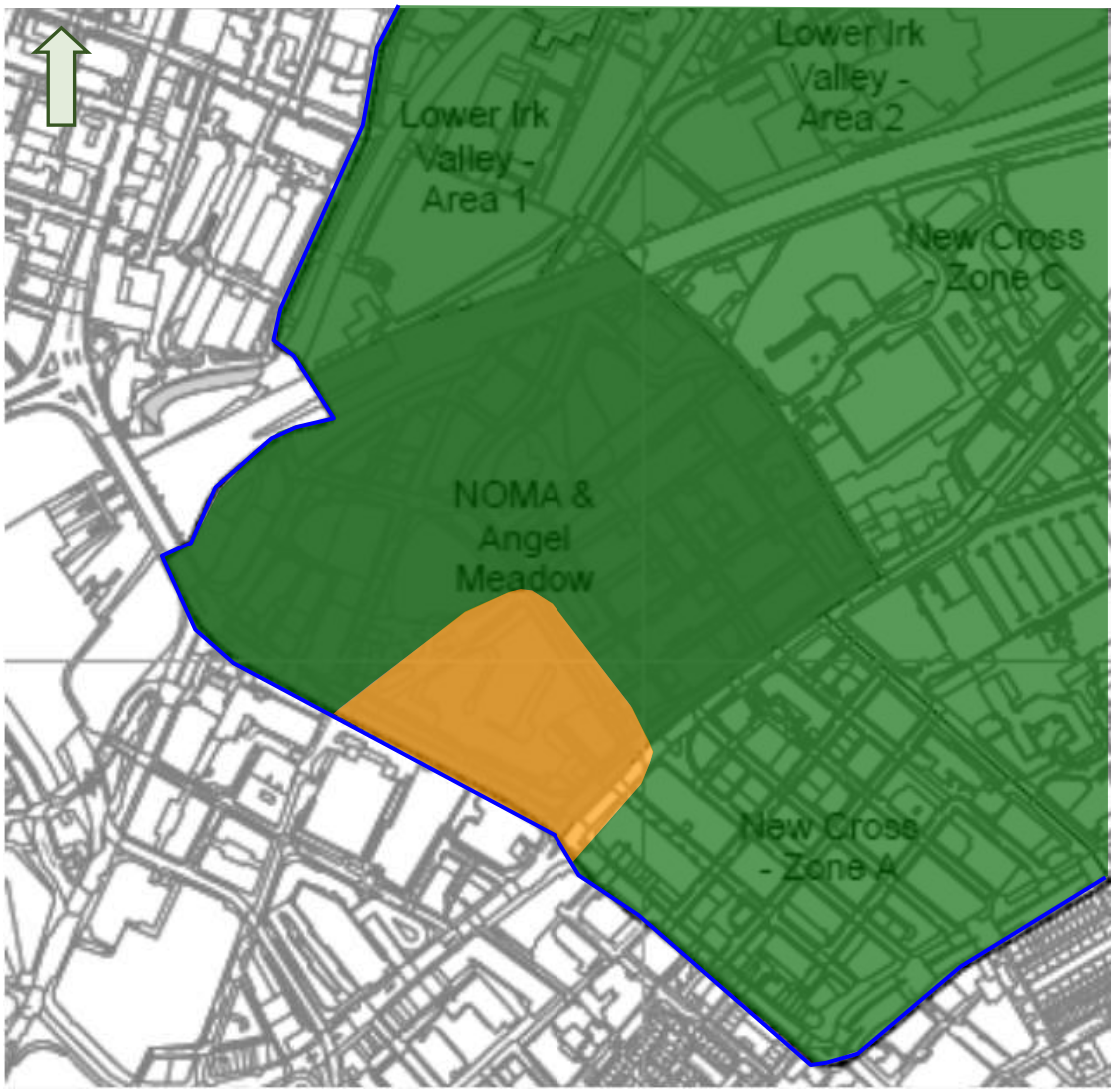


Source: Client *Not to Scale*

Legend	Very Low	Low	Moderate
	High	Very High	Site boundary

Figure 9, below, provides a more detailed extract of the moderate UXO hazard zone.

Figure 9 Extract of UXO hazard zone plan showing moderate hazard area



Source: Client *Not to Scale*

Legend					
	Very Low		Low		Moderate
	High		Very High		Site boundary

Where post-WWII construction has removed existing geological materials the UXO hazard will be mitigated within the footprint and depth of that construction. Outside of the footprint of these construction areas, between piles and below shallow raft foundations, the UXO hazard level remains unchanged to the depth of the likely maximum bomb penetration.

10 UXO RISK ASSESSMENT

10.1 UXO Risk Level

A UXO risk assessment has been undertaken for the proposed works, taking into consideration the identified UXO hazard.

Firstly, the probability of encountering UXO (PE) has been considered and rated for the different construction techniques, as detailed below.

Probability of Encounter (PE)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Secondly, the probability of detonating a UXO (PD) has been considered and rated for the different construction techniques, as detailed below.

Probability of Detonation (PD)	Rating
Frequent, highly likely, almost certain.	5
Probable, more likely to happen than not.	4
Occasional, increased chance or probability.	3
Remote, unlikely to happen but could.	2
Improbable, highly unlikely.	1
Impossible	0

Next, the probability of encountering and detonating the UXO (PE x PD) have been used to generate an overall likelihood rating (P).

P = PE x PD	LIKELIHOOD of Encounter and Detonation	Rating
21 to 25	Frequent, highly likely, almost certain.	5
16 to 20	Probable, more likely to happen than not.	4
6 to 15	Occasional, increased chance or probability.	3
2 to 5	Remote, unlikely to happen but could.	2
1	Improbable, highly unlikely.	1
0	Impossible	0

P ranges from 25, a certainty of UXO being encountered and detonated on the Site by engineering activity, to 0, a certainty that UXO does not occur on the Site and will not be detonated by engineering activity.

The likelihood of encountering and detonating UXO during site works is multiplied by the severity of such an event occurring (P x S), in order to provide a risk level using the following matrix.

Severity (S)	Rating
Multiple fatalities	5
Major injury, long term health issues, single fatality.	4
Minor injury, short term health issues, no fatalities.	3
First aid case but no lost time or ill health.	2
Minor injuries, no first aid.	1
No injuries.	0

UXO Risk Matrix

		SEVERITY (S)					
		5	4	3	2	1	0
LIKELIHOOD (P)	5	25	20	15	10	5	0
	4	20	16	12	8	4	0
	3	15	12	9	6	3	0
	2	10	8	6	4	2	0
	1	5	4	3	2	1	0
	0	0	0	0	0	0	0

The final risk assessment for the Site is given in Table 4.

Table 4 UXO risk assessment for the Sites

Hazard Zone	Potential UXO Hazard	Anticipated Works	PE	PD	P = PE x PD	Likelihood	Severity	Risk Rating	UXO Risk
Moderate	UXB	Shallow Excavations	2	2	4	2	5	10	Moderate
		Deep Excavations	3	2	6	3	5	15	Moderate
		Piling/Boreholes	2	3	6	3	4	12	Moderate
	Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
		Deep Excavations	1	1	1	1	4	4	Low
		Piling/Boreholes	1	1	1	1	3	3	Low
Low	UXB	Shallow Excavations	1	1	1	1	5	5	Low
		Deep Excavations	1	1	1	1	5	5	Low
		Piling/Boreholes	1	1	1	1	4	4	Low
	Other UXO	Shallow Excavations	1	1	1	1	4	4	Low
		Deep Excavations	1	1	1	1	4	4	Low
		Piling/Boreholes	1	1	1	1	3	3	Low

PE (Probability of Encounter), PD (Probability of Detonation), P (Overall Probability)

Shallow Excavations defined as <1.0m below ground level (bgl.)

UXO Risk	Matrix Rating	Definition
Very Low	0-1	Little action is required by the client provided that suitable records and procedures are in place to ensure appropriate action is undertaken should the UXO risk level change.
Low	2-5	Tolerable to the client as engineering activity need not alter if UXO related procedures and controls are strictly adhered to.
Moderate	6-15	May be tolerable for the client, but it is prudent to reduce the risk where cost effective and reasonably practicable.
High	16-20	Tolerable to the client only where further risk reduction is impracticable or disproportionate to the risk involved. Essential that all practicable measures are taken to reduce the level of risk.
Very High	21-25	Unacceptable to the client except in extraordinary circumstances. Imperative that all control measures are taken.

10.2 Risk Mitigation Recommendations

To ensure that the UXO risk is reduced to As Low As Reasonably Practicable (ALARP) the following mitigation is advised:

Low Risk

Excavations

Where a low risk of UXO encounter is anticipated, industry good practice is to raise the awareness of those involved in excavations so that in the unlikely event that a suspect item is discovered, appropriate action is taken. This can be achieved through UXO awareness briefings to site staff.

Boreholes/Piles

Clearance certification for borehole or pile locations is considered prudent only if a zero tolerance to risk is adopted. Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.

Moderate Risk

Excavations

UXO Awareness Briefing

It is important to raise the awareness of those involved in excavations (as per low risk).

EOC Engineer Supervision

It is recommended that an Explosive Ordnance Clearance (EOC) Engineer supervises during any excavation works.

The EOC Engineer will carry out a visual assessment on any suspect items uncovered and classify them as potential UXO or other material.

Boreholes/Piles

Clearance certification for any borehole or pile locations is considered essential.

This involves the advancement of a magnetometer into the ground at the proposed location of a borehole or pile, enabling detection of ferrous metal targets such as UXB.

The survey should be carried out to either the maximum bomb penetration depth or maximum piling/drilling depth, whichever is shallower.

There are two main systems available:-

MagDrill – this is a system that is suitable for working with ground investigation drillers. It allows a magnetometer to be lowered into the borehole to ensure the route is clear of potential UXB. This saves the mobilisation of a separate drilling or probing rig.

The advantage of MagDrill is that a more robust drilling technique can be used for challenging ground conditions.

MagCone – this is a Cone Penetration Testing (CPT) based system that facilitates the pushing of a magnetometer into the ground at the proposed location of a pile.

MagCone is suitable for cohesive/loose soils and has a much higher speed of operation compared to MagDrill. It should be noted that where dense soils or buried obstructions are encountered, MagCone is unlikely to be able to penetrate to the required depth.

Typical radius of detection should be approximately 1.0m for a 50kg bomb until site conditions are confirmed.

Assuming no objects comparable to the UXB detection range are identified, then the borehole or pile position can be considered clear of UXB.

Any identified ferrous anomalies at the borehole or pile location may need to be investigated, or the position can be relocated.

It should be noted that in Made Ground or close to buried/adjacent structures, effective UXB detection is compromised due to geophysical noise.

Table 5 below gives recommended actions in relation to the potential UXO risk level and the anticipated Site activity.

Further advice on the mitigation methods can be provided by Zetica on request.

Table 5	Risk mitigation for assumed Site activities			
Risk Level	**Typical Future Activity on the Site**			
	None	**Shallow Excavations (<1.0m)**	**Deep Excavations (>1.0m)**	**Boreholes or Pile Construction**
Very low	Ensure suitable records and procedures are in place to highlight the risk should future development be planned.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.	Ensure site staff, are informed as part of the site safety induction that the potential presence of UXO cannot be discounted. Appropriate action is required to be detailed within site procedures.
Low	**As very low.**	**As very low.** **+ It is considered prudent to include some UXO awareness training in site inductions.**	**As very low.** **+ It is considered prudent to include some UXO awareness training in site inductions.**	**As very low.** **+Clearance certification for borehole or pile locations would be considered prudent only if a zero tolerance to risk is adopted.** **Zero tolerance is commonly adopted for sites that have safety critical infrastructure such as nuclear establishments and oil refineries.**
Moderate	**As very low.**	**As low.** **+Non-intrusive investigation methods considered prudent where practical.** **+Alternatively, EOC Engineer supervision is considered prudent.**	**As low.** **+Non-intrusive investigation methods considered prudent where practical.** **+Alternatively, EOC Engineer supervision is considered prudent.**	**As low.** **+Clearance certification for borehole or pile locations is considered essential.**
High	As very low.	As moderate. +Non-intrusive investigation methods considered essential where practical. + Alternatively, EOC Engineer supervision is considered essential.	As moderate. +Non-intrusive investigation methods considered essential where practical. + Alternatively, EOC Engineer supervision is considered essential.	As moderate.
Very High	Requires immediate or special attention.	Requires immediate or special attention.	Requires immediate or special attention.	Requires immediate or special attention.
The above table is for guidance only.				

APPENDICES

Appendix 1 WWII Bombing Incident List

7th October 1940

1No. HE bomb fell on the junction of North Kent Street and Collyhurst Street, on the Site. This was recorded as UXB.

1No. HE bomb fell on the corner of Teignmouth Street and Charlton Street, on the Site.

1No. HE bomb fell on the corner of Harrowby Street and Gay Street, on the Site.

1No. HE bomb fell near the school on Gorton Street, on the Site.

1No. HE bomb fell south of Gorton Street, on the Site.

1No. HE bomb fell near Collyhurst Inn, on the Site.

1No. IB fell on Rochdale Gas Works, on the Site.

5No. IBs fell on Dantzick Street, between Bilberry Street and Warford Street, on the Site.

IBs fell on Union Bridge Iron Works, on the Site.

IBs fell along Red Bank, adjacent to the western boundary of the Site.

1No. IB fell on the railway north of Victoria Station, approximately 0.1km northwest of the Site.

IBs fell on the south side of Victoria Station, approximately 0.1km southwest of the Site.

IBs fell on Red Bank Spring and Axle Works, within approximately 0.2km west of the Site.

16th December 1940

7No. HE bombs fell on Oldham Road, between Kemp Street and Masonic Street, approximately 90m northeast of the Site.

1No. IB fell on Victoria Station, approximately 0.2km west of the Site.

22nd-24th December 1940

Manchester and Salford were heavily bombed (the 'Manchester Blitz'). In total 171No. bomber aircraft attacked Manchester and dropped over 400No. HE bombs and more than 30,000No. IBs.

The weights of the HE bombs dropped during the raid ranged from 50kg to 1,800kg. The nearest recorded incidents to the Site during these raids are described below.

1No. HE bomb fell on Style Street, on the Site.

1No. HE bomb fell on Crown Street, on the Site.

1No. HE bomb fell on Corporation Street, on the Site.

1No. HE bomb fell on Little Green Dye Works, on the Site.

1No. HE bomb fell on Cross Keys Street, on the Site.

1No. PM and IBs fell on Shudehill Mill, Miller Street, on the Site.

1No. HE bomb fell on Crown Street, on the Site.

1No. HE bomb fell on Chapman Street, on the Site.

1No. IB fell on 23 Rochdale Road, on the Site.

1No. HE bomb fell on Preston Street, on the Site.

IBs fell on the corner of Miller Street and Rochdale Road, on the south-western boundary of the Site.

IBs fell on Queen's Road, adjacent to the north-eastern boundary of the Site.

1No. HE bomb fell on Reather Street, approximately 70m southeast of the Site.

1No. HE bomb and IBs fell on Corporation Street, approximately 0.1km southwest of the Site.

1No. HE bomb fell on the public library on Park View, approximately 0.1km north of the Site.

1No. HE bomb fell near 48 Shudehill, approximately 0.1km southwest of the Site.

1No. IB fell on 75 Shudehill, approximately 0.1km southwest of the Site.

1No. HE bomb fell on Pearson Street, approximately 0.1km northeast of the Site.

IBs fell on Cross Street, approximately 0.2km northwest of the Site.

IBs fell near the junction of Luna Street and Oldham Road, within approximately 0.2km southeast of the Site.

IBs fell on 124-126 Oldham Road, approximately 0.2km east of the Site.

1No. HE bomb and IBs fell on Victoria Station, approximately 0.2km southwest of the Site.

1st June 1941

Approximately 110No. aircraft raided Manchester, dropping 42No. HE bombs and numerous IBs.

1No. HE bomb fell on the railway embankment near Honey Street, on the Site.

1No. HE bomb fell on open ground near Collyhurst Finishing Works, on the Site.

1No. HE bomb fell on the junction of Fitzgeorge Street and Keats Street, on the Site.

1No. HE bomb fell on the school on Gorton Street, on the Site.

IBs fell on Collyhurst Printing Works, on the Site.

IBs fell on the Cotton Waste Mills, Collyhurst Road, on the Site.

3No. IBs fell on Rochdale Road Gas Works, on the Site.

1No. IB fell near the Grapes Hotel, 236 Collyhurst Road, on the Site.

1No. IB fell on the corner of Dalton Street and Burton Street, on the Site.

2No. IBs fell between Swan Street and Foundry Lane, within approximately 50m southwest of the Site.

1No. HE bomb fell on open ground near North Street Brick Works, approximately 0.1km southwest of the Site.

2nd June 1941

IBs fell on Carnarvon Street, approximately 0.2km northwest of the Site.

12th October 1941

1No. HE bomb fell on the junction of Paley Street and Husband Street, on the Site.

1No. HE bomb fell on Percival Street, on the Site.

1No. HE bomb fell on railway sidings near Percival Street, on the Site.

Appendix 2 UXO Hazard and Ordnance Types

When assessing the risk from UXO including UXB, it is important to be aware of ordnance type and function. The following Section briefly describes the more common types of UXO. More data on these can be found at http://zeticauxo.com/downloads-and-resources/ordnance-data-sheets/.

A2.1 Small Arms Ammunition

Small Arms Ammunition (SAA) is one of the more recognisable categories of ordnance which is primarily designed for anti-personnel use. SAA include items such as bullets, generally up to a calibre (diameter) of 20mm.

Larger calibre small arms munitions can contain fuze mechanisms and high explosives or pyrotechnic fillings and may have been used for anti-aircraft or anti-vehicle purposes.

Generally small arms ordnance has a relatively low risk as UXO, although the larger calibre categories may have the same detonation risk as larger high explosive ordnance. SAA is often associated with discarded ammunition boxes around firing practice ranges. The Plate below illustrates some common SAA.

Plate	Photograph of typical WWII small arms ammunition



Source: Google Images

A2.2 Hand Grenades

Hand grenades can be filled with explosives or chemicals and have 3No. main parts, a body, a fuze with a pull ring and a safety-clip assembly. Fragmentation grenades are the most common and have a metal or plastic body filled with an explosive. Most use a burning delay fuze that functions for 3 to 5 seconds after the safety lever is released. Some, such as smoke grenades, are activated instantly when the lever is released.

The Plate below illustrates the typical character and condition of the most commonly found No. 36 hand grenades (Mills Bombs).

Plate	Photographs of a typical and an excavated WWII No. 36 hand grenades



Source: IWM



Source: Zetica Ltd

A2.3 Projected Grenades

Projected grenades are among the most commonly found UXO items, particularly the 40mm type. These contain high explosives and use a variety of fuzes, including some of the most sensitive internal impact-fuzing systems. They are extremely dangerous and can explode if moved or handled.

A2.4 Mortars

A mortar is a short tube designed to fire a projectile at a steep angle. Mortars can range from approximately 50mm to 280mm in diameter and can be filled with explosives, toxic chemicals, white phosphorous or illumination flares. They generally have a thinner metal casing than projectiles, but use the same types of fuzing and stabilisation.

During WWII there are records that the target areas of RAF practice bombing ranges were occasionally used for mortar training.

The Plate below shows typical 2-inch (left) and 3-inch (right) mortar bombs.

Plate	Photographs of WWII 2-inch and 3-inch mortars



Source: IWM

A2.5 Shells

Shells are a projectile containing an explosive charge designed to burst the casing that can contain High Explosives, pyrotechnic compounds or other chemicals.

Shells can be found in a range of sizes, from <20mm to several times this size. The most likely shells to be found on the Site are Small Arms Ammunition (SAA) or UXAA shells that have fallen back to the ground unexploded.

Most commonly used anti-aircraft shells were 2" and 3.7" HE shells.

If fired and found as UXO, shells can offer a particular hazard from accidental detonation as they can have sensitive fuze mechanisms. A fuze is a device which incorporates mechanical, electrical, chemical or hydrostatic components to initiate a train of fire or detonation.

The Plate below is a photograph of a 3.7" UXAA shell found in Camberwell, London.

Plate	Photograph of a recently excavated 3.7" AA shell



Source: Zetica Ltd

A2.6 Incendiary Bombs

Incendiary Bombs (IBs) ranged from small 1kg thermite filled, magnesium bodied bombs to a 250kg 'Oil Bomb' (OB) and a 500kg 'C300' IB. By far the most common air dropped devices across the UK during WWII were small 1kg to 2kg IBs.

In some cases the IBs were fitted with a very small High Explosive (HE) bursting charge. This exploded after the bomb had been alight for a few minutes causing burning debris to be scattered over a greater area. The C300 bombs were similar in appearance to 500kg HE bombs.

The small amount of HE, if any, and the almost negligible potential for IBs to remain active after more than 65 years in the ground means that these items have very little prospect of causing damage. In the majority of cases if IBs are found in the ground, the incendiary materials have deteriorated to such an extent that they are considered to provide a low UXO hazard level.

However, since magnesium and phosphorus were common components in IBs, some localised chemical contamination may occur where the contents have leached out of the IB into the surrounding soil.

The Plate below shows a 1kg IB and a variety of fragmentary remains of IBs recovered by the Civil Defence during WWII.

Plate	Photographs of a 1kg IB and IB fragments



Source: IWM



Source: Swansea Museum

A2.7 German High Explosive Bombs

Probably the most common and certainly most publicised UXOs to be found in the UK are bombs. Air dropped bombs, as a result of WWII enemy action, are found on a relatively frequent basis as UXO. They tend to be highly publicised (at least on a local basis) due to the common disruption where an evacuation of the potentially affected area is put in place.

The amount of High Explosive and the potential for a fuze to still be activated means that these devices have the prospect of causing some of the most widespread damage. WWII bombs were particularly sophisticated for their time, with anti-tamper fuzes.

Many German bombs were designed to not explode on impact and instead to cause disruption as a UXB. Some fuzes were set with a delay time of over 70 hours. During this time, an anti-tamper fuze could also be activated to detonate should it be disturbed.

The most commonly used bombs during WWII were the 50kg and 250kg sized general purpose bombs. Less frequently, the 500kg bomb was also used. Larger bombs were used, but so infrequently that any assessment of hazard is more typically based on bombs ranging up to 500kg only.

It should be noted that the June 2008 find of a 1000kg bomb in London, does demonstrate that larger bombs can be found and any risk mitigation measures should consider this.

The Plate below shows the variety of UXB recovered by the Civil Defence during WWII.

Plate	Photograph of a variety of UXB recovered by the Civil Defence during WWII



Source: IWM

A2.8 Detonators, Gaines and Fuzes

Bomb components such as detonators, gaines and fuzes were stored at operational airfields during WWII and typically contained some type of explosive charge to initiate the detonation of a munition.

A wide variety of these components were used and examples of some common fuzes are shown in the Plate below.

Plate	Photographs showing examples of WWII fuzes



Source: Zetica Ltd

A2.9 Land Mines

Wartime activities provide numerous sources of UXO within the land environment. Whilst efforts have been made to clear the known British minefields, it was common for mines to become lost for a variety of reasons and so not recovered. Additionally, such munitions might have been disposed of on an unofficial basis and so no records were kept.

Most of the mined beaches and other land areas in the UK have been cleared by the MoD. Occasionally, wave action or activities such as bombing caused mines to become displaced and these were missed as part of any past clearance activities.

The Plate below is a photograph of a typical WWII land mine used on the land area, beaches and cliffs around Britain. The example on the right was found at Gatwick Airport, formerly RAF Gatwick.

Plate	Photographs of original and recently excavated WWII land mines



Source: IWM



Source: Zetica Ltd

A2.10 Home Guard Weapons

Initially, the Home Guard's armoury was largely second-hand and much of it was of WWI vintage. Personal weapons (such as shotguns) and home-made devices were also employed.

By the end of WWII, some units were well equipped with a wide variety of small arms and munitions.

These included .32, .38 and .455 revolvers, .303 P14, .300 P17 and .303 Canadian Ross rifles, anti-tank rifles and a variety of Sub- Machine Guns (SMG) such as the .45 Thompson and 9mm Sten Guns.

Other heavier Machine Guns (MG) at their disposal included Browning, Hotchkiss, Lewis, Vickers and Marlin MG. Sub-artillery weapons were developed for them, including grenade throwers (the Northover Projector) and spigot mortars (the Blacker Bombard). 2-pdr anti-tank guns and Projector, Infantry Anti Tank (PIAT) weapons were in circulation amongst some units, and the Home Guard also manned AA guns later in WWII.

Explosives were available to some Home Guard units and were used and stored by all Auxiliary Unit patrols. As well as the flame fougasse and hand grenades detailed in this Appendix, the Home Guard had stocks of Molotov Cocktails, Sticky Bombs and SIP grenades.

In October 2006 a cache of 76No. SIP grenades was found in a garden at Seend, Wiltshire. In October 2008, a further 26No. SIP grenades were discovered in a garden in Wimborne, Dorset. Similar caches were discovered in October 2009 in Hove, Sussex and during May 2010 in Halesowen in the West Midlands, and a further cache of 20No. was uncovered on a construction site at Birdlip, Gloucestershire, in July 2010.

Also in July 2010, a box of 24No. SIP grenades was found on Cogden Beach, Dorset. In April 2012, more than 8No. SIP grenades were found on a construction site in Banbury and destroyed by members of the Army Royal Logistic Corps (RLC).

In March 2015, 80No. SIP grenades were found at a building site in Eastbourne, some of which exploded before they could be made safe by a Bomb Disposal unit.

Most recently, in May 2016, 1No. No. 76 SIP grenade was found during excavation at Chapel Point, Lincolnshire forcing works to be delayed. During WWII, the site was occupied by a pillbox and gun emplacement associated with the heavily-defended 'Coastal Crust', manned by Home Guard units. The device was removed safely.

In January 2017, a cache of 24No. SIP grenades was discovered at Derriford, Plymouth and made safe by a Royal Navy Bomb Disposal Unit.

Between December 2017 and February 2018, at least 194No. SIP grenades were found on a building site in Cambridgeshire.

The Plate below shows 2No. recently discovered SIP grenades.

Plate	Photograph of No. 76 SIP grenades



Source: Zetica Ltd

Given the irregular nature of Home Guard activity, the possibility of items of UXO or weapons being discovered at any locations occupied or used for training by them can never be totally discounted.

A2.11 UXO Migration

It is possible for explosive material, UXO or ordnance scrap to migrate to a site during landfill or dredging operations or other ground works which import Made Ground or natural materials already containing UXO. It is important to understand the nature and age of such landfill or dredging operations when assessing the potential UXO hazard level on the site.

A2.12 Effects and Consequences

In the UK, there are no recorded incidents since the decade after WWII of a UXB accidentally detonating. In recent years, bombs have been found that have fuze mechanisms that have started to operate indicating that given the right conditions a UXB may still function.

In June 2008 the UXB uncovered in the Lea Valley caused difficulty to No. 33 Regiment (Explosive Ordnance Disposal) Royal Engineers because the fuze mechanism started to operate.

The 1,000kg 'Hermann' bomb, the first of this size to be found in over 30 years, took 5 days to deactivate. This demonstrates that larger bombs can be found and any risk mitigation measures should provide the option to deal with this size of device. Since WWII, UXBs have been found on a regular basis in London.

Since WWII, UXBs have been found on a regular basis throughout Britain. Some of the most recent significant cases are described below.

In January 2016, Zetica discovered 3No. 500lb British UXB at a former airfield in Cambridgeshire. These were destroyed in controlled explosions. The Plate below is a photograph of one of the bombs.

Plate	Photograph of a recently excavated WWII British 500lb GP bomb



Source: Zetica Ltd

On the 12th May 2016, 1No. 250kg UXB was found on a building site in Bath. It was made safe and then taken to a local quarry for demolition.

In September 2016 1No. 500kg UXB and 1No. torpedo were discovered during dredging works in Portsmouth Harbour. An additional 250kg HE bomb was discovered on the 16th November 2016. These devices were towed out to sea and destroyed in controlled explosions.

On the 19th January 2017, 1No. 50kg UXB was found during dredging works along the River Thames Victoria Embankment in Central London. The device was towed to Tilbury in Essex where it was destroyed in a controlled explosion.

On the 25th January 2017, 1No. 500lb British UXB and 1No. mortar shell were found in King's Forest, Thetford. They were destroyed in a controlled explosion.

On the 2nd March 2017, 1No. 250kg German UXB was found on a building site in Brondesbury Park in the London Borough of Brent. It was defuzed by an EOD team and removed to a safe location where it was destroyed in a controlled explosion.

On the 31st August 2017, 1No. 50kg German UXB was found in a quarry in Kings Hill, West Malling, Kent. It was destroyed in a controlled explosion.

During October and November 2017, approximately 150No. canisters of Mustard Gas were found in a lake and adjacent woodland near the former WWII military airfield RAF Woodhall Spa, Lincolnshire. The canisters were removed to the DSTL at Porton Down for safe disposal.

On the 11th February 2018, 1No. 500kg UXB was found in King George V Dock, adjacent to London City Airport, during construction work. The airport was closed for two days while the UXB was made safe by an EOD team from the Royal Navy. It was removed and destroyed in a controlled explosion off Shoesburyness on the 14th February 2018.

On the 26th February 2018, an EOD team destroyed numerous items of ordnance including shells and 20mm ammunition which had been exposed by storms on Selsey Beach.

On the 31st March 2018, 2No. 870lb British PMs were found in waters off Guernsey. They were destroyed in controlled explosions.

On the 20th May 2018, a 1,000kg German sea mine washed ashore at Elmer beach near Bognor Regis, West Sussex. A 1 mile exclusion zone was enforced before an EOD team towed the device out to sea for a controlled explosion.

On the 24th May 2018, numerous ordnance-related items were found on a proposed residential development in Burntwood, Staffordshire.

On the 10th July 2018, a suspected 1,000kg German UXB was found by scuba divers near Teignmouth Pier in Devon. The UXB was towed out into open sea by a RN EOD team for a controlled explosion.

On the 15th July 2018, a suspected WWI-era bomb was found on farmland near Dolwyddelan in Conwy, North Wales. It was destroyed in a controlled explosion by an EOD team.

On the 20th August 2018, an EOD team undertook a controlled explosion on Berrow beach, Somerset, after a cache of munitions – including shells, bullets, grenades and incendiary devices – was found by residents digging up a tree stump in their garden in Burnham-on-Sea.

On the 30th August 2018, a 2,000lb German PM was trawled up by a fishing vessel off Mersea in Essex. The PM was moved to an area of open sea where it was destroyed in a controlled explosion by a RN EOD team.

Overseas

There is a long list of incidents during construction work in Germany that in some cases have led to the deaths of workers.

In June 2010, 3No. members of a bomb disposal team were killed, and 6No. others injured, whilst attempting to defuze an unexploded WWII bomb in Goettingen, Central Germany.

The bomb, the second found in Goettingen in the space of a few days, was unearthed at a depth of 7.5m during excavations for a sports stadium.

In September 2008, 17No. people were injured and considerable damage occurred to adjacent buildings when a bomb exploded on a construction site in Hattingen, Germany.

In October 2006 during road works on a motorway near Aschaffenburg in Bavaria, southern Germany, a bomb was struck by a machine and detonated. The plant driver was killed and 5No. others injured, including passing motorists.

In a similar incident in October 2004 in Linz, Austria a bomb exploded injuring 3No. workers and causing considerable damage to plant. In the same month, a WWII bomb under a back garden in Vienna, Austria, was detonated without warning by a minor earth tremor, after remaining undiscovered for over 60 years.

Further details of similar finds can be found at http://zeticauxo.com/news/.

The effects of a partial or full detonation of ordnance are usually shock, blast, heat and shrapnel damage. A 50kg buried bomb can damage brick / concrete structures up to a distance of approximately 16m away. Unprotected personnel on the surface up to 70m away from the blast could also be seriously injured. Larger ordnance would obviously be more destructive.

Explosives rarely lose effectiveness with age, although over time mechanisms such as fuzes and gaines can become more sensitive and therefore more prone to detonation, regardless of whether the device has been submersed in water or embedded in silt, clay or similar materials.

The effects of a detonation of explosive ordnance are usually extremely fast, often catastrophic and invariably traumatic to any personnel involved.

Appendix 3 Abbreviations	
AA	Anti-Aircraft
ACPO	Association of Chief Police Officers
ALARP	As Low As Reasonably Practicable
ARP	Air Raid Precaution
ASACS	Air Surveillance and Control System
AXO	Abandoned Explosive Ordnance
BD	Bomb Disposal
BDO	Bomb Disposal Officer
BDU	Bomb Disposal Unit
CBRN	Chemical, Biological, Radiological and Nuclear
CMD	Conventional Munitions Disposal
DCLG	Department of Communities and Local Government
EO	Explosive Ordnance
EOC	Explosive Ordnance Clearance
EOR	Explosive Ordnance Reconnaissance
ERW	Explosive Remnants of War
ESA	Explosive Substances and Articles
FFE	Free From Explosives
HAA	Heavy Anti-Aircraft
HE	High Explosive
HSE	Health and Safety Executive
JSEODOC	Joint Services EOD Operations Centre
IB	Incendiary Bomb
IED	Improvised Explosive Device

IEDD	Improvised Explosive Device Disposal
LAA	Light Anti-Aircraft
LMSR	London, Midland, and Scottish Railway
MoD	Ministry of Defence
PM	Parachute Mine
PUCA	Pick Up and Carry Away
RAF	Royal Air Force
SIP	Self-Igniting Phosphorous
TEP	Time Expired Pyrotechnics
USAAF	United States Army Air Forces
UXB	Unexploded Bomb
UXO	Unexploded Ordnance

Appendix 4 Glossary & Definitions	
Abandoned Explosive Ordnance (AXO)	Abandoned Explosive Ordnance is explosive ordnance that has not been used during an armed conflict, that has been left behind or disposed of by a party to an armed conflict, and which is no longer under control of that party. Abandoned explosive ordnance may or may not have been primed, fuzed, armed or otherwise prepared for use.
Camouflet	The type of cavity produced when a charge explodes underground without breaking the surface of the earth to form a crater.
Demil	Derived from the term 'Demilitarisation', it refers to the break down and the recycling or disposal of ordnance components.
Detonation	The high-speed chemical breakdown of an energetic material producing heat, pressure, flame and a shock wave.
Device	This term is used for any component, sub-assembly or completed ordnance, which may or may not have an explosive risk. It can apply to detonators, primers, gaines, fuzes, shells or bombs.
Explosive	The term explosive refers to compounds forming energetic materials that under certain conditions chemically react, rapidly producing gas, heat and pressure. Obviously, these are extremely dangerous and should only be handled by qualified professionals.
Explosive Ordnance (EO)	Explosive Ordnance is all munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents. This includes bombs and warheads, guided and ballistic missiles, artillery, mortar, rocket, small arms ammunition, mines, torpedoes, depth charges, pyrotechnics, cluster bombs & dispensers, cartridge & propellant actuated devices, electro-explosive devices, clandestine & improvised explosive devices, and all similar or related items or components explosive in nature.
Explosive Ordnance Clearance (EOC)	Explosive Ordnance Clearance is a term used to describe the operation of ordnance detection, investigation, identification and removal, with EOD being a separate operation.
Explosive Ordnance Disposal (EOD)	Explosive Ordnance Disposal is the detection, identification, on-site evaluation, rendering safe, recovery and final disposal of unexploded explosive ordnance.
Explosive Ordnance Reconnaissance (EOR)	Explosive Ordnance Reconnaissance is the detection, identification and on-site evaluation of unexploded explosive ordnance before Explosive Ordnance Disposal.
Explosive Remnants of War (ERW)	Explosive Remnants of War are Unexploded Ordnance (UXO) and Abandoned Explosive Ordnance (AXO), excluding landmines.

Explosive Substances and Articles (ESA)	Explosive substances are solid or liquid (or a mixture of substances), which are either: • capable by chemical reaction in themselves of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. • designed to produce an effect by heat, light, sound, gas or smoke, or a combination of these as a result of a non-detonative, self-sustaining, exothermic reaction. An explosive article is an article containing one or more explosive substances.
Fuze	A fuze is the part of an explosive device that initiates the main explosive charge to function. In common usage, the word fuze is used indiscriminately, but when being specific (and in particular in a military context), fuze is used to mean a more complicated device, such as a device within military ordnance.
Gaine	Small explosive charge that is sometimes placed between the detonator and the main charge to ensure ignition.
High Explosive	Secondary explosives (commonly known as High Explosives (HE)) make up the main charge or filling of an ordnance device. They are usually less sensitive than primary explosives. Examples of secondary explosives are: Nitro glycerine (NG), Trinitrotoluene (TNT), AMATOL (Ammonia nitrate + TNT), Gunpowder (GP), and Cyclotrimethylenetrinitramine (RDX).
Munition	Munition is the complete device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological or chemical material for use in military operations, including demolitions. This includes those munitions that have been suitably modified for use in training, ceremonial or non-operational purposes. These fall into three distinct categories:- • inert - contain no explosives whatsoever. • live - contain explosives and have not been fired. • blind - have fired but failed to function as intended.
Primary Explosive	Primary explosives are usually extremely sensitive to friction, heat, and pressure. These are used to initiate less sensitive explosives. Examples of primary explosives are: Lead Azide, Lead Styphnate, and Mercury Fulminate. Primary explosive are commonly found in detonators.
Small Arms Ammunition (SAA)	SAA includes projectiles around 12mm or less in calibre and no longer than approximately 100mm. They are fired from a variety of weapons, including rifles, pistols, shotguns and machine guns.
Unexploded Anti-Aircraft (UXAA) Shell	UXAA shells are army ordnance commonly containing HE, though they can also contain pyrotechnic compounds that produce smoke. Most commonly shells were 3.7” and 4.5” HE shells, although they ranged from 2” to 5.25” calibre.

Unexploded Bomb (UXB)	UXB is a common term for unexploded air-dropped munitions.
Unexploded Ordnance (UXO)	UXO is explosive ordnance that has been either primed, fuzed, armed or prepared for use and has been subsequently fired, dropped, launched, projected or placed in such a manner as to present a hazard to operations, persons or objects and remains unexploded either by malfunction or design.

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BOMBS AWAY UXO

TOOL BOX TALK FOR UNEXPLODED ORDNANCE (UXO) AWARENESS

SCOPE

This is a generic tool box talk (TBT) to increase awareness of unexploded ordnance, for any construction workers that may unexpectedly encounter it on site. It is important to note that this talk does not qualify or authorise anybody to dispose of ordnance – a little knowledge can be dangerous.

It is possible that a site specific UXO TBT may be required, if this is a specified within a risk assessment; this TBT may not be adequate for that purpose.

BACKGROUND

Unexploded ordnance is the general name for military weapons that have been used, but may still contain explosives. This can include bombs dropped by planes, artillery shells, grenades, mortar bombs and improvised weapons. Unexploded ordnance can be found at virtually any location in the United Kingdom and almost any type of construction project.

The UK, especially major cities and strategically important locations were subject to extensive aerial bombing during WW2. There was also aerial bombing in WW1 and some coastal towns were hit with artillery.

About 20% of the UK's land area has been used by the military, which includes training areas, airfields, defensive positions, explosive factories and decoys to divert enemy bombers.

Ordnance can be found at the sites of crashed aircraft and people unwittingly collect souvenirs which are still dangerous, sometimes burying them in a back garden when they realise the danger. UXO has even been found in backfill brought from a different location decades ago.

HAZARDS

A high explosive bomb from WW2 still has the potential to kill many people, if it were to detonate. Even small items of UXO could easily kill, maim or start fires. If any item which is suspected to be UXO is found, is must be treated with respect and considered dangerous.

POTENTIAL CONSTRUCTION SITES

It is possible that UXO could be found on any UK construction site, however it is most likely to be discovered in the ground. This means that those working in the ground (such as those completing site investigation, piling and foundation construction) are most at risk of encountering it. UXO has been discovered embedded in the fabric of buildings after being dropped from a plane and also hidden under floor boards and in the attic during refurbishment works.

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EMERGENCY RESPONSE PLAN FOR DISCOVERY OF UXO

Your site will have a UXO Emergency Response Plan, which will be activated if suspected UXO is located. The key steps to remember are:

If you find something suspicious and think it may be UXO, **DO NOT TOUCH IT**. Switch off all machinery, plant and tools, leaving the area as quickly as possible, but minimising the risk of your equipment becoming a hazard and harming other people. Immediately inform your supervisor or site management about what you have seen, describing the size, shape and location of the object. If you are able to quickly take a photo with your phone, this could help identify the item.

If a UXO emergency is declared, all workers will be instructed to evacuate the site and move to a location at least 400 metres away from the suspect UXO, out of a direct line of sight. It is important that you use a safe route and do not move towards the suspect UXO, if possible.

When at the muster point, you must await instructions from your supervisors and management. You will not be allowed to return to the affected area of the site until the Police or a UXO specialist gives you permission.

If appropriate, give a presentation on the egress routes and the muster point(s) described in your site's UXO Emergency Response Plan at this point.

EXAMPLES OF UXO

Photographs and descriptions of UXO that can be found on construction sites follow. It must be noted that the intention of this information is to increase the awareness of UXO for site operatives, not train them to identify ordnance. Operatives should not put themselves in danger or additional risk trying to identify suspicious objects.

Photos:

1. SC250, 250kg German aerial dropped bomb & fuze
2. SC250, 250kg German aerial dropped bomb
3. SD70, 70kg German aerial dropped bomb
4. SC50, 50kg German aerial dropped bomb
5. SD10, 10kg German aerial dropped bomblet
6. SD2, 2kg German aerial dropped bomblet
7. SD1 FRZ, 1kg German aerial dropped bomblet
8. 1kg German incendiary
9. British 3.7 inch anti-aircraft artillery shell
10. British Mk 5 anti-tank mine
11. British PIAT (Projector, Infantry, Anti-Tank) round
12. British 2 inch mortar round
13. British grenades
14. Detonation of 250kg German bomb
15. Non-explosive ordnance
16. WW2 warning poster

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1. SC250 - 250kg German aerial dropped bomb



Body length	1.7 metres	65 inches
Diameter	370mm	14.5 inches

The two circles on the top of the body are fuzes. On this size bomb, it was common that one would be a delayed action fuze, that could initiate up to 72 hours after it landed. Many other fuzes were used including a sensitive version, solely designed to kill bomb disposal teams.

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2. SC250, 250kg German aerial dropped bomb



Body length	1.7 metres	65 inches
Diameter	370mm	14.5 inches

Photo below shows a typical WW2 German fuze



Length:	100mm	4 inches
Diameter:	60mm	2.5 inches

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SD70, German aerial dropped bomb



Body Length:	810 mm	32 inches
Body Diameter:	230 mm	9 inches

70kg bomb dropped on England during WW2, containing about 30kg of explosive. Landed in soft ground and was defused after WW2.

It is very unlikely that a bomb that has been dropped from an aircraft will be discovered with a tail fin. When Allied bombs have been abandoned (often at air fields used by the US Air Force), it is possible that they will be found intact.

In the event that a tail fin is discovered during ground operations, it is likely that a bomb has followed that route. Check that a UXO risk assessment has been completed and ask the risk assessment company for further advice.

Large German bombs with the "SD" prefix were designed to penetrate concrete and armour. They had thicker steel bodies and contained less explosive.

Bombs with the "SC" prefix were more common. They were general purpose bombs with a higher explosive content, designed to maximise the effect of the blast.

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3. SC50, 50kg German aerial dropped bomb



Body length:	760mm	30 inches
Diameter:	200mm	8 inches

General information: These were the most common high explosive bombs to be dropped on the UK during WW2.

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4. SD10, 10kg German aerial dropped bomblet



Over-All Length:	22 inches	550mm
Body Length:	13 inches	320mm
Body Diameter:	3.5 inches	90mm

17 bomblets carried in each container

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5. SD2 – 2kg German aerial dropped bomblet



Overall length of cylindrical body: 90mm 3.5 inches

Diameter: 75mm 3 inches.

These are a very early example of cluster bombs and were distributed in containers that carried up to 108 bombs. The “stem and wings” were part of the arming system and are likely to have disintegrated over time. An average of 3nr SD2 are discovered in the UK each year. They were often fitted with delayed action or motion sensitive fuzes.

Upper photo shows a complete SD2, including arming rod and ‘wings’ after restoration.

Lower photo shows 2 cylindrical bodies



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6. SD1 FRZ – 2kg German aerial dropped bomblet



Length:	130mm	6 inches
Diameter:	50mm	2 inches
Weight:	0.5kg	1.1lb
Explosive:	60g	2.1oz

Originally fabricated as mortar round for the French army, then converted and used as the first cluster bombs. 392 sub-munitions could be carried in an AB 500 container; 50 within an AB70 container (pictured later).

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7. 1kg German incendiary bomblet



Body length (incl fin):	240mm	13.5 inches
Diameter:	50mm	2 inches

General information: About 75% of the unexploded air dropped weapons that the Army deal with in the UK are 1kg and 2kg incendiaries. This equates to about 43 in an average year. Vast numbers of small incendiary bomblets were dropped on the UK during WW2. These devices work using thermite and their explosive content is relatively low.

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8. British 3.7 inch anti-aircraft artillery shell



Length:	430mm	17 inches
Diameter:	95mm	3.7 inches
Weight:	13kg	28 lb
Max altitude:	14km	45,000 ft

AAA shells are the most common type of UXO found on construction sites. When discovered, they will typically be located within 2 metres of the surface. The 3.7 inch shell (pictured) was the largest AAA shell in common usage.

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9. British Mark 5 anti-tank mine



Weight	5.7kg	12.5 lb
Height	100mm	4 inches
Diameter	200mm	8 inches
Weight	5.7kg	12.5 lb

Huge numbers of mines were laid on beaches and to strengthen the defences of key areas, such as bridges and road blocks. Whilst most were recovered after WW2, mines are sometimes discovered on construction sites.

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10. British PIAT - Projector, Infantry, Anti Tank



Diameter:	83mm	3.3 inches
Length:	370mm	14.5 inches
Weight :	1.35 kg	3lb

These projectiles were fired from man-portable launchers, entering service in 1943 and were capable of destroying an armoured vehicle. A powerful spring launched these devices up to 320 metres. Faulty fuzes meant that only 75% of the projectiles exploded on impact.

These devices are more likely to be discovered on rural or “out of town” construction sites, that have been used as a firing range.

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11. British 2 inch mortar rounds



Typical length: 225mm 9 inches

Diameter: 50mm 2 inches

Types of round include:

- High Explosive
- Phosphorus (smoke)
- Illuminating

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12. British grenades

Mills bomb



Diameter:	60mm	2.5 inches
Length:	100mm	4 inches
Weight:	0.8kg	1.7 lb
Explosive:	0.08 kg	0.2 lb

There are numerous types of these grenades and tens of millions have been produced. They were used from 1915 to the 1980s. Their danger area was considered to be 100 yards.

Number 69 grenade



Diameter:	60 mm	2.5 inches
Length:	114 mm	4.5 inches
Weight:	0.4 kg	0.8 lb
Explosive:	0.09 kg	0.2 lb

Introduced in 1942, it had a smaller destructive radius than the Mills bomb, so was intended for defensive operations. It was made of Bakelite, a type of plastic.

The low quantity of metal contained in these grenades makes them difficult to locate using metal detectors.

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Sticky bombs (Number 74 grenade)



Weight: 1 kg

Length: 230 mm

Diameter: 100 mm

Explosive: 0.57 kg nitro glycerine

2.5 million sticky bombs were produced. They consisted of an explosive filled glass/ plastic sphere, which was coated in birdlime, protected by an outer case, until required for use.



The small quantity of metal contained in these grenades makes them very difficult to locate using metal detectors.

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Gammon bombs (no 82 grenade)



Weight empty 0.34 kg

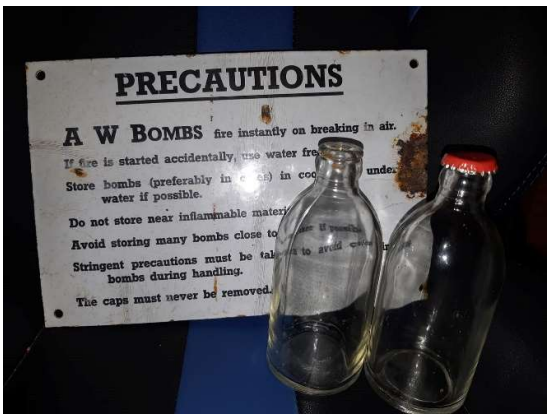
Explosive 0.9 kg of plastic explosive

These were designed as a replacement for sticky bombs, which were considered dangerous and temperamental. The flexible bag could be filled with as much explosive or shrapnel, as was considered necessary, so could be used against vehicles and people. The fuze for the No 69 and Gammon Bomb were the same type.

The small quantity of metal contained in these grenades makes them very difficult to locate using metal detectors.

Self Igniting Phosphorus (SIP) grenades





Size: Half pint bottle

Also known as an A W bomb (named after the manufacturers), these improvised explosive devices are very unstable and will cause a significant fire if they are exposed to air (eg by breaking the glass). About 6 million were made and distributed to the Home Guard, around the UK. They are normally discovered in timber crates, often containing 24 grenades. When one box is discovered, others are sometimes present.

The small quantity of metal contained in these grenades makes them very difficult to locate using metal detectors, unless they are located in the original box, with the metal sign still attached.

Upper photo shows bottles shortly after discovery.

Lower photo shows two empty bottles with the warning sign that is found on the storage box

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13. Detonation of 250kg German bomb



Unlucky for some!

Don’t let it be you.

This was a 250kg device that was located on a construction site and destroyed in Kent.

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14. Non-explosive ordnance.

Discovery of non-explosive ordnance may indicate that the site has a previously unidentified use as a military training area or target area, so a risk assessment should be completed. It can be difficult to know whether these items contain explosive and an expert will be required to confirm the status.

WW2 British armour piercing 2 pound projectile



These items are unlikely to be found at locations other than those with a former military use, probably firing ranges. If found with the brass casing intact, they will be considered as UXO and the Police informed.

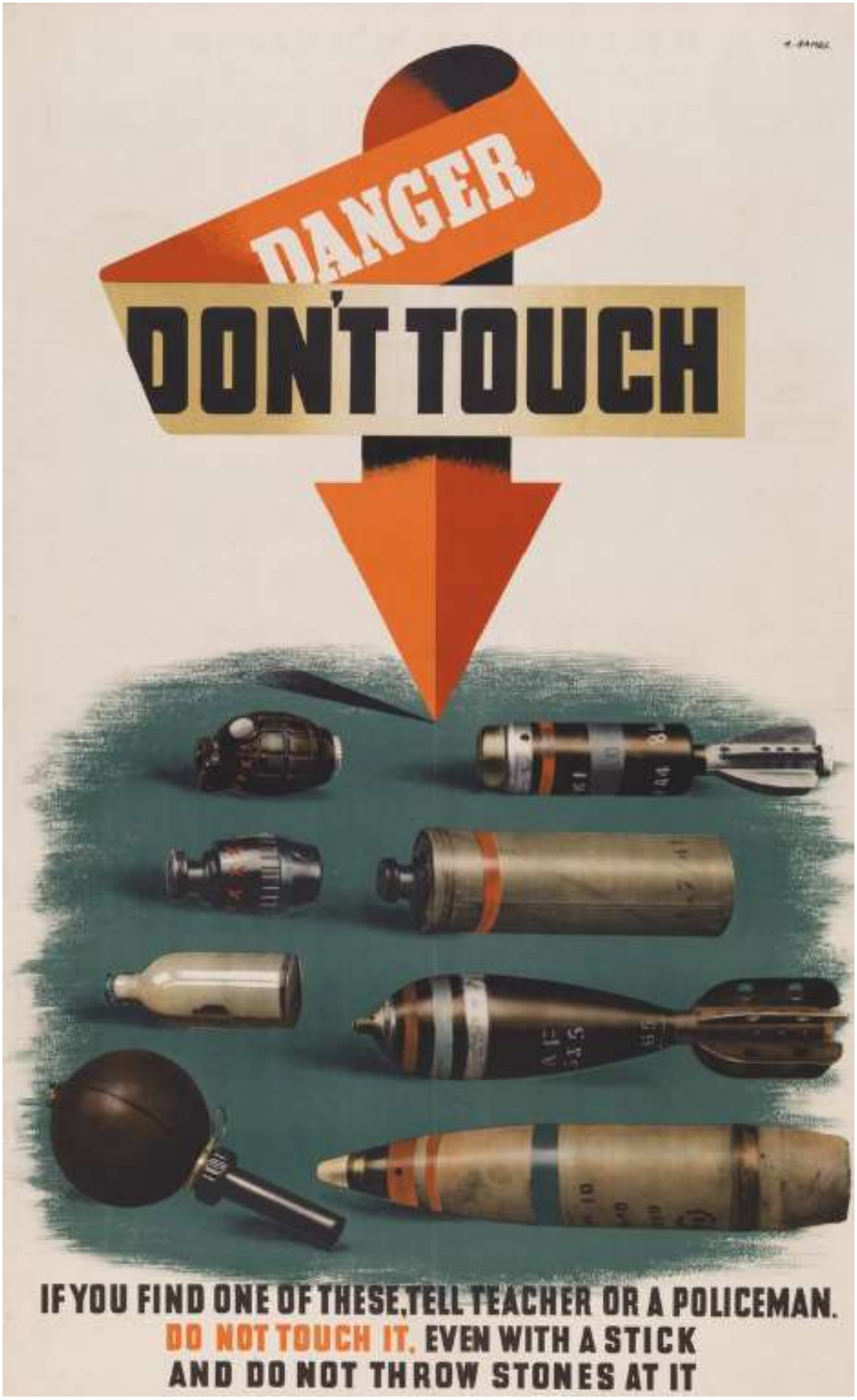
WW2 German air dropped AB23 or AB70 munition dispenser



Length:	43 inches	1100 mm
Diameter:	8 inches	200 mm

Variations of these containers were used to carry sub-munitions such as the SD1 and SD2. The containers themselves contain a small quantity of explosive in the fuze, however their discovery could indicate that other explosive ordnance is present in the area. It is unlikely that these items will be at depth, but if found, Police should be informed and the risk assessment should be checked and revised, if necessary.

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BAA.2210 Red Bank Neighbourhood, Victoria North HIF Infrastructure Project

Project Execution Plan

Document ref:							
Revision	Purpose description	Originator	Checked	Reviewed	Authorised	Date	Review Date
01	First issue for review	J. Annett	N. Peters	N. Peters			
02	Second issue for review	J. Annett	M. Cullen E. Duncan P. Tims	M. Cullen E. Duncan P. Tims			
03	Further updates based on review	J. Annett	N. Peters	N. Peters		13/09/22	
04	Quarterly Update	L.Chambers	N. Peters	N. Peters		19/12/22	
05	Review following Planning Application, inclusion of Air Quality Monitoring plan	L.Chambers	N.Peters	N.Peters		17/04/2023	

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Section A Project Execution Plan

A1.0 Introduction

This Project Execution Plan (PEP) describes the methods to be implemented to control the health safety and environmental requirements with regard to project scope of works detailed in section 2.1 of this plan. The BAM Nuttall policy and systems under which this plan is prepared are described in the BAM Nuttall management manual.

This plan is primarily in four parts that define the way in which each aspect of this project will be managed. Part A of this document contains the common BAM Nuttall core set of requirements. When this section is read in conjunction with Part B, Part C or D and associated schedules these interlink to form the following documents as defined in **Table A1.0** below:

Table A1.0 PEP Layout

Section A Common Requirements and schedules	+	Section B Health and Safety and schedules	=	Construction phase plan as required under CDM
	+	Section C Environment and schedules	=	Environmental management plan
	+	Section D Quality and schedules	=	Quality plan
	+	Section B, Section C, Section D and schedules	=	Project Execution Plan

The arrangements for the management of health, safety, environmental and quality issues during site activities within this project are detailed in the sections, schedules of this document. They make provision for the development and use of subsidiary documents – procedures, activity plans, inspection and test plans.

The overall purpose of the plan is to record the initial risk assessment, how we are going to proceed and establish a project system capable of meeting customer, statutory and regulatory requirements. It gives assurance that systems are in place and guides BAM Nuttall staff in implementing them.

A1.1 Project execution plan administration

Authorisation

The plan meets BAM Nuttall, customer and legislative requirements. It is verified as meeting system requirements of BAM Nuttall and those of ISO 9001, ISO 14001 and ISO 45001.

This plan is authorised for use by the agent, area health and safety advisor, area environment advisor and quality manager. The Divisional Director confirms acceptance of overall responsibility for effective operation of this plan. Confirmation is either by e-mail, electronic signature or information management system.

Distribution

This plan once approved and verified is stored on the information management system used by the project 01.1 Project Procedure, PEP

The plan once approved and verified is distributed by the agent or document controller via e-mail and stored as detailed in the project document control procedure.

Revisions to the plan

Major revisions to this plan are made and approved in the same way as the originals including the obtaining of customer approval and authorisation where required by the conditions of contract. Minor amendments to the plan are not referred to the original plan authorisers, Minor

amendments to procedures are dealt with by the agent through the document management system.

Inputs into the plan

This plan is based on the contract documents referenced in **Table A2.1** and any pre-construction information provided by the customer, the designer and/or forwarded by the Principal Designer

It has been prepared taking account of:

- ISO 10005 *Quality management guidelines for quality plans*
- ISO 9004 *Management for the sustained success of an organisation – A quality management approach,*
- BS 6079 *Project management. Principles and guidance for the management of projects,*
- PAS 99 *Specification of common management system requirements as a framework for integration*
- 'The Construction (Design and Management) Regulations Guidance on Regulations (L153)– *Managing health and safety in construction'*

Control measures defined within subsidiary documents to this plan (risk assessments, procedures, activity plans, work package plans and inspection and test plans), are primarily based on the following information sources:

Normative References and Definitions ***MG00: Management System Definitions***

Normative references and definitions are defined in the contract specification and documents. These are detailed in **Table A2.1**

A2.0 The project

A2.1 The project works

The project to which this execution plan relates is described in **Table A2.1** this plan is subject to continual development as the project progress and information becomes available.

Table A2.1: The project

Project overview	Construction of infrastructure to allow for future residential development of the site.		
Client	**Manchester City Council**		
Client representative	**Turner & Townsend for MCC & Pell Frischmann**		
Principal Contractor	**BAM Nuttall LTD.**		
Lead designer	**ARUP**		
Other designer(s)	Plan-IT,		
Principal Designer	**BAM Nuttall LTD.**		
Others	**Pell Frischmann**		
Contract terms and conditions	NEC Option A		
Specification	ARUP Design Specification,		
F10	Date Applied for	Start Date	Finish Date:
	11/10/2022	10/10/2022	01/07/2024
Site working hours	Mon to Friday- 0730-1800hrs. No weekend work unless cleared. If weekend work is permitted hours shall be Saturday 0830-1400, no Sunday or bank holiday working is permitted.		

	No night work unless authorised within the contract. All local authorities' embargos to be adhered to.	
Scope of work **(Project works covered by this plan)**	**Site setup** **Tree clearance** **Bulk Earthworks** **Treatment of invasive species** **Ground remediation** **Footpath construction** **Foul and surface water drainage installation** **Partial demolition of Honey Street retaining wall** **Redundant service disconnection and decommissioning** **Service connections between plots and existing assets (telecoms, water, electricity, etc.)** **Highway construction** **HV ducting installation within existing carriageway** **Hydroseeding** **Landscaping** **Street lighting installation** **SUDS installation** **Retaining wall installation** **Fencing** **Removal of temporary infrastructure** **River Clearance works**	
Significant works to be subcontracted	Tree Clearance Hydroseeding Kerbing and Surfacing works Drainage Invasive Species Management Materials Testing Precast Manufacture Demolition of Structures Removal of Contaminated Ground Water Electrical Installation and commissioning Fencing Security + CCTV monitoring	
Key Risks and Opportunities	Identify and list the 5 key risks on the project	Identify and list 5 key opportunities on the project
	1. Thefts/Vandalism of plant and materials 2. Earthworks balance, potential that the quantities priced withing in the model are incorrect. 3. Roger/Chase/Hargreaves Street parking restrictions could impact the delivery of the works 4. Labour Rates – increase in line with inflation and current cost of living crisis.	1. Design change of U-Tube, utilisation of alternative solution 2. Reduced cost of installation of U-Tube 3. Programme betterment, reduced cost and programme 4. Roger Street Access Concrete vs Steel, move away from concrete and construct in steel. 5. Design development and value engineering during construction works

	5. Measurement omission in tender documents vs construction issue drawings	

A2.2 Project location and Green Travel Plan

Project location

Table A2.2: Project location

Project Name and address	
Victoria North HIF Infrastructure Works	
	Main site compound and offices located on Hargreaves Street, M4 4EJ. Access routes on to site for deliveries and work are subject to change.

Green Travel Plan

In line with our corporate requirements to consider the impact our works activities have on the environment; the agent has considered transport arrangement to and from site for personnel and visitors. **Schedule A2** defines the arrangements.

A2.3 Site security

Appropriate site security arrangements are selected by the agent following an assessment of the risks of injury to members of the public. Outline arrangements are defined in **Table 2.3**

Table A2.3: Site security

Security fencing	Fencing to be erected around all work areas whilst in progress, and security on site for out of hours working. Where existing fencing is in place this will be maintained for the period of works.
Controlled access points	Former Creamline Dairy Entrance – Locked gates. P&P Entrance – Locked gates. Hargreaves Street compound – Locked gates.
Warning signs	To be provided advising public that works being carried out. Warning signs are also to be secured to temporary fencing around specific work areas and at access points.
Security cameras	To be deployed around the main compound on Hargreaves Street and wherever else that is deemed practical as the project progresses
Security guarding	Overnight Guard with Dog at Hargreaves Street compound.
Material and plant	Locked, isolation switches, secured within fenced compound. Hargreaves Street, former Volker Yard and Plateau Compound
Fuel security	Lockable Double Bunded 1000L Fuel Tank
Any other relevant matter	If 3rd Parties enter the fenced off area, works to stop and direct the party out of area. If persons approach the work, the operators will stop work and direct them safely past and away from the work area.

A2.4 Project objectives and targets

Specific objectives and targets with measurable performance indicators, including those set by the client, are defined for this project within the **Table 2.4** below**.** These targets are monitored by the agent for distribution to other interested parties.

Objective /Target	Performance indicator	Responsibility
Safety	100% of AP's are briefed 100% of Site Inductions Zero accidents or injuries Promotion of safety culture across the division	BAM
Environment	Zero reportable incidents All waste to be logged on BAM Site	BAM
Quality	Close out NCRs within 4 weeks	BAM
Management	CCS Score >40	BAM
Sustainability	Sustainable procurement and influencing the supply chain will be key to driving low carbon initiatives and performance measures	BAM
Social Value	Ratings on SVDP and committed targets throughout project	BAM

A2.5 Management arrangements

The agent is responsible for the implementation of this plan and ensures that it is communicated to all those who require to work in accordance with it directly and indirectly, including the supply chain.

A2.5.1 Project Organisation

The organisation chart contained in **Schedule A1** describes the project team, their relationships, contracted and nominated / designated roles. This includes any off-site support staff who may be called upon for assistance by the project team. The project team is constantly reviewed against contract needs and requirements including any changes in the scope.

A2.5.2 Personnel selection (competence, knowledge, awareness)

Personnel are selected on the basis of qualifications, skills, knowledge, behaviours and experience (competence) to suit the scope of project works. The aim of this is to ensure that the selected project team has complimentary skills to meet the engineering delivery and requirements of the customer. A record of this knowledge skills analysis process is listed **Schedule A4** in the project personnel file. This schedule contains confidential information, which must be stored securely at all times in accordance with data protection requirements.

A2.5.3 Project appointment - *NP17: Signatory Powers*

The agent gives written notice to individual personnel of the responsibility for the nominated / designated roles listed in **Schedule A1**. Health and safety duties are further detailed in the BAM Nuttall health and safety policy booklet.

A2.5.4 Drugs and alcohol - *NP3.2: Monitoring for drugs and alcohol (non-rail)*

NP3.3: Monitoring for drugs and alcohol, (rail) NP3.4: Declaration of medical restrictions,
NP3.13 Discipline

BAM Nuttall expects employees and subcontractors to take a responsible approach to drugs and alcohol.

BAM Nuttall carries out pre-employment drug screening. On this project BAM Nuttall reserves the right to:

- carry out random tests for alcohol and drug use
- to test employees and subcontractors who are involved in industrial accidents
- where a manger believes that substance abuse has contributed to an incident, changed behaviour or affected work performance.

BAM Nuttall takes disciplinary action, including, counselling, which may lead to dismissal or removal from site. This includes personnel who refuse to undertake any testing which may or may not result in a positive test. In the case of subcontractors, this will lead to removal from the project.

A2.6 Supply chain management - *NP5: Supply chain management*

Supply chain management within BAM Nuttall is carried out in accordance with the requirements defined in NP5: Supply chain management and associated procedures. A list of vendors for this project is contained within the project procurement schedule SCF01. SCF01 Procurement Plan - Project Live.xlsx

A2.6.1 Procurement of good and services for the project - *NP5.3 Procurement of material goods, NP5.4 Procurement of sub-contractors and equipment*

The agent reviews the procurement schedule or equivalent document prepared during the bid process in conjunction with the relevant company buyer or estimator. This joint review is to ensure that nominated vendors have the necessary skills, knowledge, experience and training to allow them to fulfil their requirements on this project. Procurement dates and special arrangements will be agreed and monitored by the agent and buyer. This is achieved through regular communication as the project progresses. Client supplied goods are subject to the same process of evaluation as those supplied by BAM Nuttall.

A2.6.2 Management of sub-contractors - *NP5.6 Management of vendors on site*

Subcontractors are required to submit documented information to illustrate how they intend to meet the contract and specification requirements to demonstrate compliance. Key sub-contractors are informed of the documents to be provided within their initial enquiry, for subsequent discussion and agreement during the start-up meeting carried out for sub-contractors and major suppliers.

Sub-contractors' performance on site is continually managed over the course of the project works. This is the responsibility of the agent, who monitors and provides feedback on the vendor's performance as described within the company procedure.

A2.7 Product Traceability

Product traceability is a contract requirement of this project as defined in **Table 2.7.**

Table A2.7: Traceability requirements

Products and materials where traceability is required
Tarmac Kerbs Drainage products – pre-cast units, chamber lids, gully lids, gully pots, pipework Concrete – cube tests Ducting Pre-cast concrete elements Duct chambers Retaining wall elements Stone Block paving Earthworks – traceability, contaminated soils, structural qualities, chemical properties

Materials may be incorporated in the works as 'status unknown' and held traceable until tests confirm acceptability.

On this project we do not envisage the use of a new or modified products that will require product acceptance, where they are required the above standards and guidance will be complied with.

A2.8 Equipment control - *NP11: Measuring equipment control*

Monitoring, measuring and test equipment is inclusive of all surveying instruments, laboratory equipment, cable locators, field testing equipment, gas and noise monitors and any other specific items identified by the agent. The need for monitoring, measuring, testing and

calibration of site equipment is identified within the project's inspection and test planning, company procedures and work specific activity plans.

Control of equipment is the responsibility of the site equipment engineer who is appointed in writing by the agent to ensure project equipment is controlled, checked and calibrated.

A3.0 Risk Management

The effective management of risk is fundamental to the control of work delivery and to the ultimate successful completion of this project. Continual forward thinking and introduction of appropriate controls prevents the occurrence of the unexpected, ensuring project objectives are achieved. The risks to health, safety, quality and environment have been identified during the preparation of this plan. These risks have been detailed in **Section 3.2** and **Section 3.3** of this plan.

A3.1 Management of project risk - *NP22.5: Risk and opportunity management of project works*

Risk and opportunity management at the construction stage commences with preparation of this project execution plan following a review of the contract requirements. Ongoing management of risk and opportunity is undertaken throughout the project. This is monitored using the live threats and opportunity management register (ROMR).

Victoria North ROMR Rev 5.xlsx

A3.2 Health, safety, quality and environmental risk - pre-construction and designers - *NP23: Health safety and environmental risk assessment*

The hazards identified from pre-construction information, including design risk assessments, that incorporate design lifecycle are listed in **Table 3.2** which provides a checklist for where they are dealt with in this plan.

Table A3.2: Hazards from pre-construction information

Hazard	Section of plan addressing hazard
Leptospirosis	B4.20 Other significant hazards
Giant Hogweed	A3.2: Constraints and enhancements
Existing/uncharted utilities	B4.2 underground services
Working close to railway lines	B4.18 Railways
Working near existing structures	B4.17 Stability of existing structures
Plant movements	C3.5 Nuisance - NP27.4 Control of site nuisance
Asbestos	B4.20 Other significant hazards
Working on or near a watercourse	

A3.3 Health, safety, quality and environmental risk - construction phase - *NP23: Health safety and environmental risk assessment*

The risks from safety, health, quality and environment are identified during detailed planning of work activities. This includes work carried out in the design phase. Actions to prevent and reduce risks are identified with any remaining (residual) risks clearly understood and communicated to the workforce.

- **Section B** details health and safety risks

- **Section C** details environmental risks
- **Section D** details quality risks

Risk assessment may identify the need for an activity plan as a necessary control to manage the outcome and it is appropriate to prepare an activity plan for all activities of significant risk.

A3.4 Emergency procedure - *SG23: Emergency planning*

Site specific emergency procedures are prepared to ensure limitation of injury and damage should an incident occur.

The emergency procedures listed and included in **Table A3.4** below apply. Site notices describing these procedures are included in **Schedule A6**. A list of key personnel and organisations for contact or liaison in the event of an emergency, together with contact telephone numbers, is displayed as a site notice and included in **Schedule A6**.

Table A3.4: Incident and emergency arrangements

Site specific emergency arrangements	Are arrangements to be drilled?	Frequency of drill
Accident	Yes	6 monthly
Fire	Yes	Monthly
Confined space rescue	Yes	3 monthly
Rescue from height	No	N/A
Person in water	Yes	Annually
Oil and chemical spill	Yes	3 Monthly
Watercourse pollution	Yes	3 monthly
All stop	Yes	3 monthly
COSHH burns	Yes	3 monthly
Heat exhaustion	Yes	3 monthly
Heart attack (Defibrillator)	Yes	3 monthly
Rescue from Plant	Yes	3 monthly

Following an incident, the emergency services and senior members of the management team are informed immediately and where applicable the relevant enforcing authority is also informed. Communication with the media and public is managed and controlled. Thereafter, all communication is referred to the Head of Communications at Head Office.

A3.5 Site tidiness

The agent ensures that facilities are kept clean, and tidiness (housekeeping) is maintained in the following areas by completing **table A3.5** below:

Table A3.5: Site tidiness

Area	Action	Minimum Frequency
Offices	Cleaner employed	Daily
Welfare and toilets	Cleaner employed	Daily
Access routes	Foreman	Weekly
Materials storage	Storeman	Daily
Work areas	Foreman/subcontractor supervisors	Daily

A4.0 Project design, planning and programming

A4.1 Design - *NP7: BAM Nuttall design services NP20: Design management for design services*

BAM Nuttall is responsible for the following elements of permanent works design:

- Management of Arup permanent design.

Communication contacts for the designers are listed in **Table** A4.1

Table A4.1: Communication with designer(s)

Name of Lead Designer	**Name of representative**	**Position**	**Contact details**
Arup	Rachel Sandham	Project director	Rachel.Sandham@arup.com
Method of communication			
Meetings	Weekly meetings		
Document transfer arrangements	Use of ProjectWise		
Other	Email		
Name of Other Designer	**Name of representative**	**Position**	**Contact details**
BAM Nuttall Temporary works department	Richard.Garland@bam.com	Design Engineer	Joshua.Blayney@bam.com Alex.Leahy@arup.com
Method of communication			
Meetings	Microsoft Teams, Meetings in person		
Document transfer arrangements	Email		
Other	ProjectWise		

The BAM Nuttall nominated project design co-ordinator ensures that design information, including all design changes and risk assessments, is issued to the Principal Designer. For projects containing design elements this project execution plan is updated to reflect designer risk assessments.

The Lead Designer is also responsible for ensuring:

- Safe by design review is carried out
- That the work of all other designers meets the overall design requirements
- Design is subject to an interdisciplinary check
- That a constructability review is carried

The agent ensures any subcontractor designed temporary works, including formwork and falsework, are referred to the BAM Nuttall Design Department for the relevant categorised checking.

Design validation

The arrangements for any design validation, as defined in the customer's requirements, specification, or designer's quality plan, are set out in the quality control plan of **Schedule D1**.

The design co-ordinator ensures that testing or trials are supervised appropriately, the designer is notified of the results and that the lead designer reviews them.

A4.2 Engineering Management

The agent appoints an engineering management team in accordance with BAM Nuttall procedures. Engineering appointments for this project are defined in schedule A1 of this plan.

If required a separate engineering management plan is produced and detailed in Section E of this plan. This section should be read in conjunction with Section A together they form the Engineering Management Plan for this project.

A4.3 Project planning - *NP2: Planning and programming*

For the project, the bid programme is used as the basis for the contract programme submitted for the approval of the client or his representative. From this programme, activities are identified, and arrangements made for detailed planning.

In addition to work activities, arrangements are planned for the establishment of capability in terms of system, resources and competence. The planning process enables the timely identification and provision of these requirements in sufficiently robust form to allow the works to progress as programmed to the satisfaction of all stakeholders.

A4.4 Project programme - *NP2: Planning and programming*

The outline programme for the works is as described in the following table. Whilst the anticipated completion date stated is updated as necessary in revisions to this plan, it is indicative only and has no contractual significance.

Table A4.4: Project programme key dates

Contract award date	10/05/2021 PCSA, 31/10/2022 NEC 3 Option A
Start on site date	20th September 2022
Appointment / arrival on site of critical / key contractors	Cabin delivery and installation – Nixon's – 12/9/22 Tree clearance – Cornthwaites – 20/9/22 Invasive Species Clearance - Feb 2023 Drainage works Dec 22 Gas diversion (Dantzic St) 17/01/23 BT diversion (Dantzic St) 14/03/23
Key consent dates	Planning Approval 14/07/22 Judicial Review 25/08/22
Key sectional/milestone completion dates	New Comms Supply ducting complete 29/11/23 New HV Supply ducting complete 12/04/24 ENWL Power on Date 03/05/24
Anticipated completion date	25/10/24

The bid programme has been used as the basis for the contract programme. From this programme, activities are identified, and arrangements made for detailed planning. The developed contract programme can be reviewed by following this link. VNIF DRAFT Summary Programme for Nov22 Monthly Report.pdf

A4.5 Access and egress / traffic routes (on and off the project) - *NS2: Access and egress*

The agent ensures that sufficient time and resources are allocated to maintain access routes for pedestrians and vehicles. Arrangements in place are listed in table A4.5 below.

Table A4.5: Access and egress / traffic route maintenance

Route	Responsibility	Action
Deliveries	BAMN	-Access across P&P bridge off Collyhurst road. -Access via former Creamline Dairy on Red Bank -Access to Hargreaves Street compound via Roger Street
Personnel segregation	BAMN	BAM to install safe walkways to work areas across site.
Plant and equipment	BAMN	To only use designated access routes as per delivery procedure
Monitoring	BAMN	Supervisor and gate men to monitor at all times.
Access to point of work	BAMN	As per Workplace Transport Plan. Access within site following designated vehicle and pedestrian routes.
Zonal working	BAMN	BAM Supervisor to install segregation appropriate to work area and maintain

A4.5.1 Workplace transport plan

The layout of access to and egress from the site, traffic routes, parking and loading/unloading areas, restricted areas are prominently displayed on a Site Transport Plan, including rules can be found in Schedule A8.

A4.6 Budget and financial control - *NP9: Budget and financial control*

BAM Nuttall seeks to deliver a sustainable business result by implementing a process of comprehensive, effective and consistent budget and financial control.

The project team are responsible for establishing financial controls as described below:

- Establishment of a robust performance monitoring systems that provides a basis for subsequent commercial monitoring during the life of the project.
- Obtaining a timely understanding of the project's performance against budget, taking into account the programme position.
- Providing management with a report of accurate and auditable costs at the end of each monthly accounting period.
- Ensuring that applications for payment, certification and cash received are all in accordance with the contract.
- Providing a reliable and clear forecast of the expected financial outcome of the project.
- Preparing clear, accurate and comprehensive commercial plans and reports.
- Cashflow management

A5.0 Communication

The agent determines and implements effective arrangements for formal communication with all stakeholders. Details of communication routes for this project are detailed in **Tables A5.1 to A5.5**

A5.1 Customer communication

On this project, such communication is achieved as indicated in the following table.

Table A5.1: Customer communication

Name of customer's representative	**Position and organisation**	**Contact details**
Customer's representative name	Matt Ralph MCC Project Manager	07946605520 Matt.Ralph@turntown.co.uk
Name of safety manager	Mark Marshall MCC SHQ Associate Director	07966837835 Mark.Marshall@turntown.co.uk
Name of environmental manager	TBC	TBC
Name of quality manager	Matt Willis Pell Frischman Project Manager	mwillis@pellfrichmann.com
Arrangements for other meetings / forums	Regular Planned Public drop-in meetings with BAMN representatives Teams & face to face meetings - Monthly	

A5.2 Principal Designer

The agent will provide information to the Principal Designer in the ways described in the following table.

Table A5.2: Principal Designer Communication

Name of Principal Designer	**Position and organisation**	**Contact details**
Andrew Green	**Principal Designer**	**07771971615** **andrew.green@bam.com**
Meeting / communication arrangements	Teams & face to face meetings - Monthly	
Information transfer method	*Email, ProjectWise use.*	

A5.3 Contractors

The agent will provide information from contractors to the Principal Designer in relation to construction information and for inclusion within in the health and safety file in the ways described in table 5.3.

Table A5.3: Communication with other contractors

Name of contractor	**Name of contractor representative**	**Position**	**Contact details**
Nixons Welfare Hire	Sarah Jones	Module Specialist	0333 005 0003 Ext:5054 SJones@nixonhire.com
Method of communication			
Meetings	Pre-start		

Document transfer arrangements	Email		
Other			
Name of contractor	**Name of contractor representative**	**Position**	**Contact details**
Cornthwaites	Brian Thoburn	Operations Manager	07714136530 Brian@cornthwaitetreecare.co.uk
Method of communication			
Meetings	Pre-start		
Document transfer arrangements	Email		
Other			
Name of contractor	**Name of contractor representative**	**Position**	**Contact details**
Rhodar	George Roberts	Project Manager	G.Roberts@Rhodar.co.uk
Method of communication			
Meetings	Pre-start		
Document transfer arrangements	Email		
Other			
Name of contractor	**Name of contractor representative**	**Position**	**Contact details**
Flannery Plant Hire	Tom Owen	Operations Manager	01925 814 394 07793 244396 t.owen@flanneryplant.co.uk
Method of communication			
Meetings	Pre-start		
Document transfer arrangements	Email		
Other			
Name of contractor	**Name of contractor representative**	**Position**	**Contact details**
Hydrainer	Jimmy Corless	Depot Manager	pumphire.northwest@hydrainer.com
Method of communication			
Meetings	Pre-start		
Document transfer arrangements	Email		
Other			

A5.4 Other Interested Parties

The agent establishes communication links with other interested parties such as the local authority, regulators, community representatives. Details of these are listed in **Table A5.4** below. Details of community links are provided in the community action plan contained in **schedule A3.**

The project will be registered with the Considerate Constructers Scheme (CCS) in accordance with criteria defined in BAM Nuttall Management Bulletin MB123 unless the client restricts such membership. Community investment activity data is recorded monthly on BAM Nuttall Ltd. Central database.

Table A5.4: Other interested parties

Designated Parties	Name & Address	Contact Name (s)	Contact Details (Email, mobile, telephone)
Local authority departments	Matt Ralph		Matt.Ralph@turntown.co.uk
EA	Richard Fairclough House, Knutsford Road, Warrington WA4 1HT	Andy Davies	07393798325 Andy.davies1@environment-agency.gov.uk
HSE	Redgrave Court, Merton Road, Bootle, Merseyside L20 7HS		0151 951 4000
Local groups	Friends of St Catherine's Woods		https://www.facebook.com/groups/friendsofstcatherineswood/
Project Planning consultant	Avison Young	Ed Harvey	07831402681 Ed.harvey@avisonyoung.com
FEC	Matt Ralph		Matt.ralph@turntown.co.uk
Network Rail?	(via) Rhiannon Monaghan		rhiannon.monaghan@manchester.gov.uk

A5.5 Workforce - *NP24 Activity Plan, SG26 Workforce consultation*

The agent identifies workforce representatives to be involved in discussions pertaining to the ongoing methodology and programming of the works. People and personnel consulted are listed in the relevant activity plans or work package plans.

In addition, the following formal arrangements have been established to consult with the workforce generally

Table A5.5: Other communication arrangements

Information discussed	Method	Frequency
Site Induction	Presentation with Verbal briefing and visual aid	Every 12 months or if absent from site for 3 months
General site information	Safety Committee	Monthly
Alerts and bulletins	Face to face	As determined by issue
Toolbox talks	Face to face	As determined by site needs
General observations	Observation cards	As matters are identified

	Observation App	
Briefings	Verbal	Daily and feedback at the end of the shift
Activity Plans	Verbal	Each AP & RA
Workforce Forum	Verbal – Minutes Taken	Fortnightly
Feedback Friday	Verbal	Weekly
Voice meeting	Verbal– Minutes Taken	Monthly

A5.6 Induction and site rules

The induction and site rules are developed from pre-construction information, and these can be found in **Schedules A5** and **Schedule A6**. Documents are subject to review and revision as work or information changes or develops.

A5.7 Project Documented Information - *NP10: Disposal and retention of company documents*

Documented information used in the management of the project is defined by the agent. The agent is responsible for ensuring that the relevant documents are available to personnel required to use them and personnel carrying out work are responsible for ensuring that current documentation is used.

Project data - NP10.3: ***Management of documents during the contract phase of a project***

The agent establishes a formal project data management system in accordance with division specific requirements. All documents received or issued by the project are controlled and maintained in accordance with this project system. It is fully described in a project specific procedure, listed in **Schedule D2** of this plan. The relevant parts of which are communicated to all project personnel required to work with documents.

Project documents are maintained throughout the duration of a project as evidence of the compliance, conduct, progress and certification of the project works, and to provide assurance that requirements have been met.

These documents include all correspondence, instructions, minutes of meetings, as-built programmes, resource schedules, registers, test certificates, inspection checklists, training records etc. Project documents are maintained and archived in accordance with the project document control system defined within this project management plan.

A5.8 Health and Safety File

The Health and Safety File details the information needed to alert those carrying out future construction work, including cleaning, maintenance, alterations, demolition and refurbishment. It identifies information to help those carrying out these works to determine a safe system of work.

The file will contain information for the client who has a duty to provide information about their premises and infrastructure, to those who carry out work there.

A5.8.1 Layout, format, and storage

Information will be collected throughout the project for the Health and Safety File by all parties. BAM Nuttall is responsible for preparing and submitting the Health and Safety File to the Principal Designer in an agreed format. The Health and Safety File will be submitted to the Principal Designer within a time frame identified by the contract from the date of substantial completion.

A5.9 Management of change - *NP21: Change management*

All changes to contract requirements, together with changes to arrangements, resources and subcontracts are recorded in accordance with any relevant contract requirements, and on the project change management register (CMR).

Superseded documents are promptly withdrawn from use and are clearly marked as superseded. All changes to construction requirements are reviewed for possible effects on existing risk assessments and subsequent control arrangements.

A5.10 BIM - *BIMG A1.4 BAM Nuttall BIM Standard*

BIM utilisation has been deployed on this project. A BIM execution plan (BEP) has been prepared using template BIMG A1.6. This plan is contained in **Appendix 7** to the project execution plan.

A6.0 Project Performance, Evaluation and Improvement

A6.1 Project Nonconformity, complaints and corrective action

A6.1.1 Quality nonconformity - *NP14: Non-conformity and corrective action*

Nonconformities may be errors in work items or failures of management systems. Any person discovering a potential nonconformity reports it to the engineer responsible for inspections of that element of work so that it can be resolved immediately wherever possible. The engineer also informs his line manager. All project non-conformities are recorded on the project improvement register contained in BAM Flow, accessed via Connect. BAA.2210 BAM Flow

Investigation concentrates on identification of root causes in order that appropriate action can be taken to avoid recurrence. Monthly reviews are made and analysed by the Quality Manager to ensure that all necessary action has been taken. All non-conformities are referred to quarterly divisional system review meetings for the initiation of suitable longer-term actions.

A6.1.2 Health and safety nonconformity - *NP1.14: Reporting and investigation of incidents*

Nonconformity in respect of health and safety is recorded as an accident or incident, i.e., reportable accident, a lost time accident, an accident book entry, a reportable dangerous occurrence, significant incident, health and safety incident, near-miss / observation or inspection finding as appropriate.

Investigation concentrates on identification of root causes in order that appropriate action can be taken to avoid recurrence. Periodic reviews of accidents and incidents are made and analysed by the Director, Health and Safety to ensure that all necessary action has been taken. Recurrent problems or those relevant to other projects are referred to divisional system review meetings for the initiation of suitable longer-term actions.

A6.1.3 Environmental nonconformity - *NP27.7: Reporting environmental incidents*

Nonconformity in respect of environmental matters is recorded as an environmental incident, near miss or inspection finding. Incidents are reported and inspection findings are recorded on the environment department database in accordance with departmental procedures.

Investigation concentrates on identification of root causes in order that appropriate action can be taken to avoid recurrence. Periodic reviews of incidents are made and analysed by the Head of Environment to ensure that all necessary action has been taken. Recurrent problems

or those relevant to other projects are referred to divisional system review meetings for the initiation of suitable longer-term actions.

A6.2 Audit and inspection

A6.2.1 Project audit - *NP12: Audit*

A programme of audit for the project is set by the divisional director at system review meetings. Audits are carried out by trained internal auditors who are independent of the project. A copy of the audit programme for this project is available from the ***area quality manager***.

The agent makes arrangements to accommodate internal audits, together with any external audits requested by the customer or his representative or arranged by the Head of Business Process and Quality, Director Health and Safety or Head of Environment for the registration bodies.

A6.2.2 Project Inspection - *SG05: Safety tours, EG42: Closing out issues raised in BIM 360 Field Environmental inspection report*

It is a requirement that health, safety, quality and environment are monitored continuously as a day-to-day activity. A site safety and environmental engineer is appointed to carry out routine weekly site inspections. Reports of these inspections are passed to the project agent who ensures that timely action is taken, usually confirming this at weekly site meetings.

Safety, environmental and quality inspections are carried out by divisional safety and environmental advisors and divisional quality manager(s). Results are reported in writing to the agent. The agent confirms to the divisional director in writing actions taken as a result of these visits.

In addition to the inspections detailed above project inspection visits will be conducted by senior managers. These visits not only act a monitoring tool for improvement, but they also provide valuable interaction and communication for project personnel with senior managers.

A6.3 Review - *NP13: Review*

A6.3.1 Project review (meetings)

Regular reviews are undertaken throughout the duration of the project at internal meetings of the project team to verify that planned arrangements remain suitable and are effective in controlling the work. These meetings also review the results of audits, nonconformities and problems and establish actions to prevent recurrence and improve the system.

Attendance and agenda for meetings are set out in **Tables A6.3.1a and b**.

Table A6.3.1a: Review meetings

Alter table to suit site requirements		
Meeting	**Frequency**	**Attendance**
Progress	Monthly	Agent Senior site managers. Senior site QS Client representatives
Internal site co-ordination	Weekly	Agent Sub-agent Section agents QSs

Alter table to suit site requirements		
Meeting	**Frequency**	**Attendance**
Internal health, safety environment and quality review	Monthly	Agent Sub-agent Section agents QSs Site safety and environment engineers Site quality engineer / quality manager
Internal section	Weekly	Section agents All section staff QS
Design management/ review meeting	Monthly	Agent Design coordinator All designer's representatives

Table A6.3.1b: Review meeting agendas

Alter table to suit site requirements					
Minimum agenda items	**Progress**	***Internal site co-ordination***	***Internal HS&E***	**Section**	**Design Management meeting**
Review and agree previous minutes/actions	✓	✓	✓	✓	✓
Health, safety and welfare, including review of CPP	✓	✓	✓	✓	
Environment	✓	✓	✓	✓	✓
Progress and programme	✓	✓		✓	✓
Resources – plant, materials and labour		✓		✓	✓
Client requirements and information required against programme. Review registers of TQs/RFIs, SIs/CVIs, and drawings.	✓	✓		✓	✓
Commercial matters	✓	✓		✓	✓
Risk assessments, activity plans, inspection and test checklists and approvals	✓	✓	✓	✓	✓
Suppliers and subcontractors' performance, future programme, client approval.	✓	✓	✓	✓	✓
Nonconformities, problems, complaints, improvements.		✓	✓	✓	✓
Results of audit, audit plan.		✓	✓		
Quality control plan and allocation of inspection duties and approvals	✓	✓			✓
Contract records (as built drgs, test results, completed checklists, maintenance manuals)	✓	✓			✓
Objectives and targets	✓	✓	✓		
Design delivery risks	✓				✓
Value engineering	✓	✓			✓

Alter table to suit site requirements					
Minimum agenda items	**Progress**	***Internal site co-ordination***	***Internal HS&E***	**Section**	**Design Management meeting**
Next meeting date	✓	✓	✓	✓	✓

A6.3.2 Technical review – *NP25 Technical and engineering delivery*

To ensure that the best available technical knowledge is provided to the project agent, technical / quality reviews are held for matters where there is significant risk in terms of:

- health and safety
- activities/ items critical to quality
- quality of construction
- environmental impact
- company image and/or reputation

Activities to be subject to technical review, together with approximate timing, are listed in **Table A6.3.2**

Table A6.3.2: Technical review

Project activities subject to technical / quality review	**Approximate date of review**
Earthworks	As – built information. Hold points identified in ITPS, Checklists
Highways Construction	As – built information. Hold points identified in ITPS, Checklists
Structures	As – built information. Hold points identified in ITPS, Checklists
Contaminated Ground Remediation	As – built information. Hold points identified in ITPS, Checklists
Landscaping	As – built information. Hold points identified in ITPS, Checklists
Drainage	As – built information. Hold points identified in ITPS, Checklists
Fencing	As – built information. Hold points identified in ITPS, Checklists

Records are maintained of all reviews in the form of meeting notes, records of actions, correspondence, and requests for information or as required by the contract.

A6.3.3 Customer feedback - *NP26: Customer relationship management*

The aim of the project team is to work in collaboration with the customer to achieve a project that is on time and budget. Customer satisfaction is monitored from project meeting and formal feedback.

A6.4 Improvement

The agent continually seeks to identify opportunities to improve the effectiveness and efficiency of the project, and of the BAM Nuttall business. All personnel are made aware of the need to recognise errors as opportunities for improvement. Without this awareness, mistakes are ignored or concealed and data for the improvement activity lost.

Improvement opportunities on this project are identified from:

- formal reviews of performance (**see Section 6.3**)
- feedback on performance from clients, vendors and regulatory bodies
- review of audit results
- analysis of nonconformities and complaints

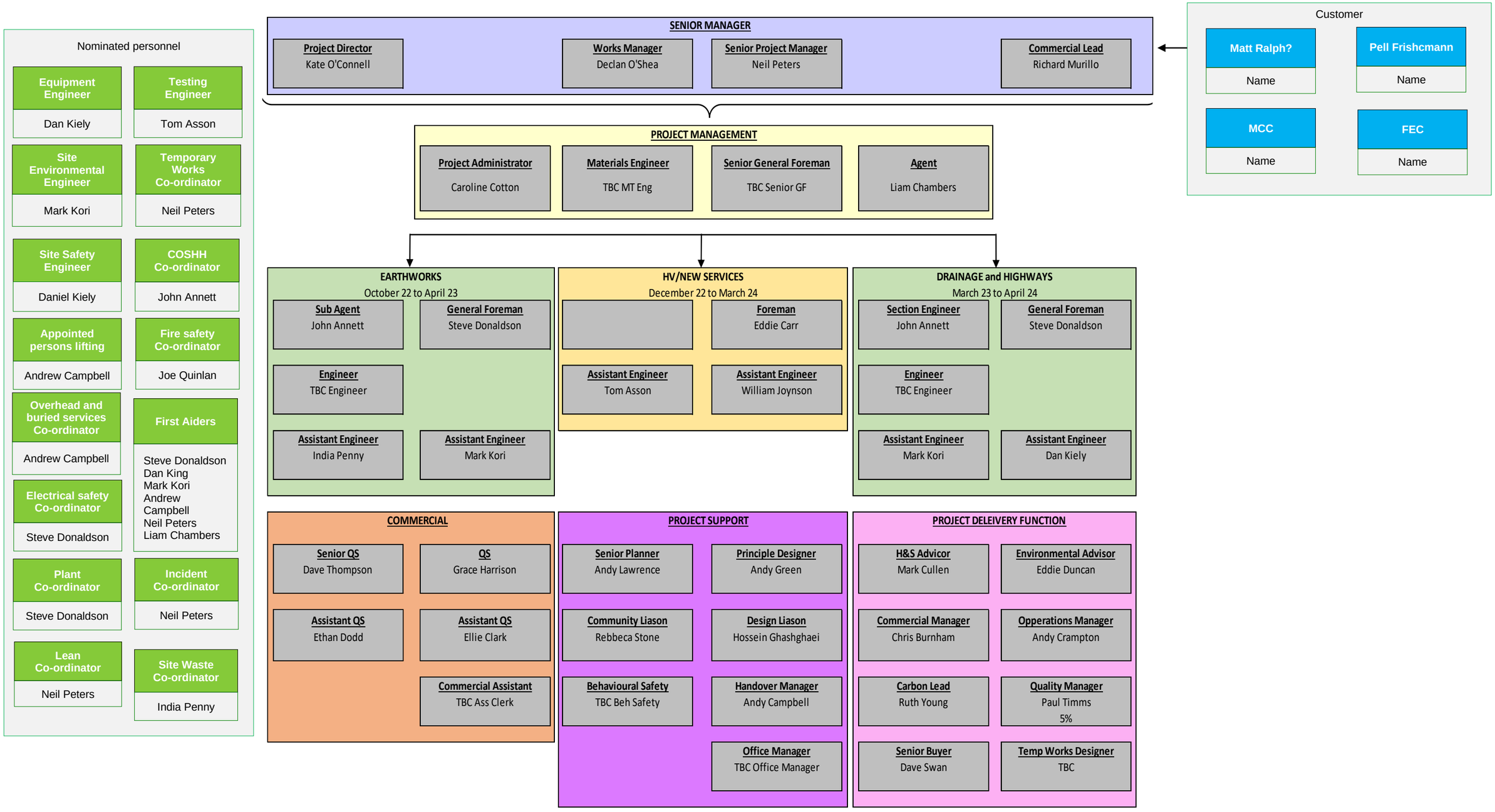
A6.4.1 Delivering value and continual improvement through Lean

The project will utilise **"Lean Construction Thinking"** to allow conception, development and delivery of value innovation and continual improvement.

To initiate the improvement, process the agent will act as the ***"Lean Leader"*** who will be responsible for the development of a sustainable lean culture on the project, selection of the lean projects and the improvement plan. This deployment plant is detailed in **insert applicable section** of this plan or insert hyperlink to plan.

In addition to the *lean leader a* **"*Lean co-ordinator*"** will be appointed who will identify improvement projects, select suitable tools and techniques for improvement, such as collaborative planning, deploy tools such as visual management, collect the data and monitor and report results to the Lean Leader. This organisational structure is detailed in the project organisation chart contained in **Schedule A1** of this plan.

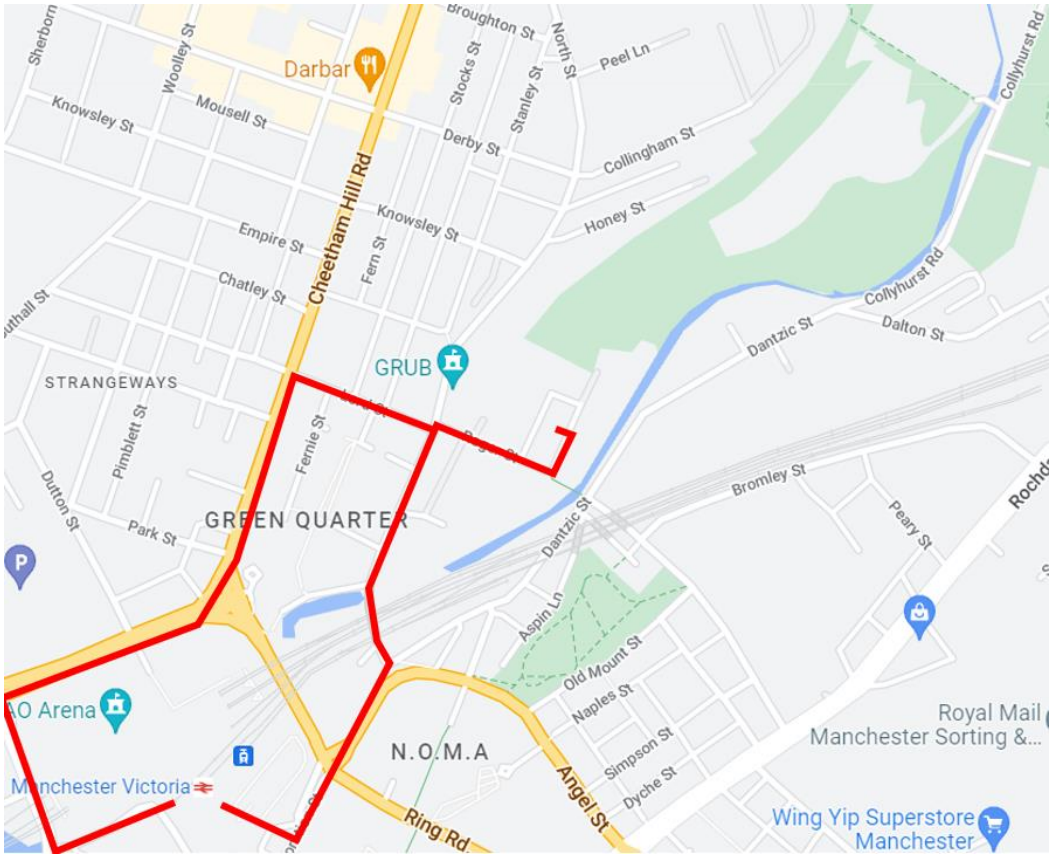
Schedule A1 Organisation Chart – see customer section from the new PEP template



Name	Appointment
Daniel King, Neil Peters, Stephen Donaldson, John Annett, Mark Kori, Liam Chambers, Andrew Campbell	First Aider
Andrew Campbell	Appointed person Lifting
Tom Asson, Daniel Kiely	Buried and overhead service coordinator

Note
Signatory powers on this project are issued by the agent are in accordance with NP17 Signatory powers.

Schedule A2 Green Travel Plans



Icon	Description	*Description of route*
	Pedestrian	Routes as shown in red on the map above
	Disabled	Routes as shown in red on the map above
	Cycle	Routes as shown in red on the map above
	Bus	Routes as shown in red on the map above
	Train	Mainline into Manchester Victoria and then follow walking route to site
	Tram	Exit system at Manchester Victoria and follow walking route to site
	Car/Motorcycle	Access from A665 to area
	Ferry	N/A
	Aeroplane	Manchester airport

Schedule A3 Community Action Plan

1.0 Introduction

BAM Nuttall Ltd is a socially responsible organisations committed to meeting the expectations of our stakeholders, while adding value to the environment and society. We aim to fully engage with local community groups, individuals, organisations and stakeholders directly impacted by our projects.

We recognise that how we recruit and retain employees, purchase goods and services can create opportunities to improve the community we operate in as well as improving our business performance.

BAM Nuttall Ltd believes we can make a significant and sustained improvement to the community by:

- Recruiting from and having a workforce profile that reflects the local community.
- Removing barriers to employment.
- Considering local suppliers when purchasing.
- Building local education and training links.
- Investing resources including time and money to support community groups, and charities.
- Listening and communicating with the community.
- Liaising with the community.

Our intention is to identify opportunities for community involvement within a two-mile radius of each of our sites and offices. This plan sets site specific objectives for engagement with the relevant parties. It also designates responsible persons to the tasks and where appropriate, actions and timescales.

The community action plan is divided into four sections. Each section in turn details how we plan to eliminate any negative impacts of the works on the local community and where possible how we will endeavour to bring positive benefits to the local community, residents and supply chain as a result of the works.

- **Section 2: Implementation of plan on site**
- **Section 2: Identifying opportunities for community action**
- **Section 4: Record of community involvement**
- **Section 5: Review**

2.0 Implementation of plan

2.1 Community Liaison

BAM Nuttall Ltd will maintain an effective liaison with landowners and the local community about ongoing construction activities and any potential disruption. We will use open days and letter drops to keep the community up to date.

All residents adjacent to the works will be informed about the detailed plans and construction timetable in advance of works starting and all necessary detailed mitigation agreed that relate to access and reducing disturbance.

In the event of a complaint these will be responded to within 12hours, and recorded in the Engagement Register. The contractor and developer are responsible for responding to and resolving complaints. Any complaints will be discussed as required at the weekly site meeting, if appropriate to do so.

2.2 BAM Nuttall Contacts

BAM Nuttall Ltd will establish a project contact telephone number, manned during operational hours and with access to representative(s) with authority to resolve key issues. A log of all comments and actions taken will be kept and made available for inspection.

Contact Name	Organisation	Position		
Neil Peters	BAM Nuttall	Project Manager	[redacted]	
Mark Cullen	BAM Nuttall	Trainee H&S Advisor		
John Annett	BAM Nuttall	Sub Agent		
Scott McGuinness	BAM Nuttall	Behavioural Safety Advisor		
Stephen Donaldson	BAM Nuttall	General Foreman		
Josh Clark	BAM Nuttall	Project Stakeholder Engagement & Social Value Manager		

2.3 Community disturbance

BAM Nuttall Ltd will ensure disturbance to the local community from construction activities is minimised to that required for safe implementation of the works. We will also minimise disruption to access for all properties. Any interruptions to access will be agreed with the householder and kept to the

minimum time required. Emergency access will be available at all times. Where required diversions and alternatively pedestrian crossings will be setup to avoid endangering the general public

3.0 Community Action Opportunities

3.1 Community Liaison

Our site will support suitable local causes and events that are nominated or participated in by our employees; however, we also seek to interact with suitable organisations and charities within the area that we are working. The following opportunities for involvement have been identified within a two-mile radius of the site.

3.2 Education and training links and work experience opportunities

We will work with the following education and training institutions to share knowledge and provide work experience opportunities.

Institution name	Type of institution	Contact name	[redacted]	Opportunity for involvement	Approve?
Eden Girls School	Secondary School	Ash Rasoul		Develop long term relationship with the school throughout the project on careers in construction	
Bridge GM	Greater Manchester Combined Authority Consultants	tbc	tbc	Working with them on the wider careers programme for grater Manchester on the virtual workshops to be delivered to schools – meet your futures event	

3.3 Employment opportunities

BAM Nuttall Ltd will strive to employ the members of our current workforce who live closest to the site wherever possible. The following roles cannot be provided by our available local employees and will be recruited from the local community:

e.g.
Qualified plant operators (excavators/dump trucks)
Joiners

Steel fixers
General Civil Engineering Operatives (GCEOs)
Secretary/ administration
Cleaner
Quantity surveyor etc

The opportunities to be actioned have been approved by:		Date:	

4.0 Record of Community Action

The record of community action will be recorded on the engagement register and updated regularly**.** We will also be providing quarterly reports to MCC on the social value delivered.

Engagement Register - VNIF-ARP-ZZ-YYY-RE-WD-0005

5.0 Review of Community Action

Objective	Yes	No	If yes, what do we do? If no, why not?
Does the workforce include members of the local community?	☒	☐	We are working with local charity YES Manchester to advertise employment opportunities locally. We are also encouraging our supply chain to actively employ local people.
Are people with disabilities actively employed? Have we removed barriers to employment – correct site setup and provision of welfare facilities etc?	☒	☐	We will share vacancies with Igneus to advertise with their clients. The plan for the site set up is all disability access compliant
Were local suppliers considered when purchasing?	☒	☐	We are actively seeking to use local suppliers as much as possible. We held a local supplier event in March 2022 to allow local SMEs the opportunity to learn about the project and meet the team. We will also set a target for local spend as part of the Social Value Delivery Plan,
Do we work with local educational and training institutions?	☒	☐	Liam Chambers is an Enterprise Advisor for Eden Girls Leadership Academy, which is close to the site. We have also participated in a number of online webinars with Bridge GM which are broadcast to schools across Greater Manchester. We also have plans to attend a number of school careers fairs in the upcoming term.
Do we invest resources to support the local community and charities?	☒	☐	We will have a community space on site with access to computers and internet free of charge. YES Manchester will use this space once a week to assist their clients with employability training and job applications. We are also actively contacting other community organisations to offer the use of the space.

Do we liaise with the community about our project?	☒	☐	We work with the client to liaise with nearby business and community groups about our project. We provide regular updates & attend meetings with the community to keep them informed

Review carried out by:	Rebecca Stone	Date:	18/08/2022

Objective	Yes	No	If yes, what do we do? If no, why not?
Does the workforce include members of the local community?	☐	☐	
Are people with disabilities actively employed? Have we removed barriers to employment – correct site setup and provision of welfare facilities etc?	☐	☐	
Were local suppliers considered when purchasing?	☐	☐	
Do we work with local educational and training institutions?	☐	☐	
Do we invest resources to support the local community and charities?	☐	☐	
Do we liaise with the community about our project?	☐	☐	

Review carried out by:		Date:	

Other comments (e.g., lessons learned, feedback, etc)

Schedule A4 Skills Matrix

Role	Qualifications	Competence	Evidence
Project Manager: Neil Peters	*Degree qualified*	.	.
Agent: Andy Campbell	*Degree qualified*	.	.
Agent: Liam Chambers	*Degree qualified*		
Sub Agent: John Annett	*Degree qualified*	.	.
Design Delivery Manager: Joshua Blayney	*Degree qualified*	.	.

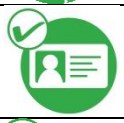
Schedule A5 Induction and Site Rules

Schedule A5.1 Induction

Site induction agenda
Company vision
An overview of the project, including management arrangements on the site.
Senior management commitment to health safety, environment and quality on this project
The part people can play in the successful delivery of the project, including individuals' responsibilities
Identification, awareness and measures to control the project risks, including relevant information from the Project Execution Plan
Importance of 'right first time'
Familiarisation with key personnel, project organisation and structure. This includes customer, principal designer etc.
Arrangement for briefing workers on an ongoing basis
Arrangement for consulting the workforce
Appreciation of fair treatment and respect for all
Site layout, facilities and security
Areas of restricted access including exclusion zones
Site rules familiarisation
First aid and emergency arrangements , including accident and incident arrangements
Mandatory permit requirements
Observation reporting and 'Your Safety is My Safety'
Occupational health checks
Monitoring for drugs and alcohol

Schedule A5.2 Site rules

The following rules have been made to ensure the health and safety of you and your work mates on this site and protection of the environment. They apply to everybody on site.

Rule	Logo	Strapline
I never enter an exclusion zone		Mobile plant Seen is safe
I understand my job, and I am aware of the associated risks. If anything is unclear, I will ask for additional information.		Plan dropped? Work is stopped
I call other people to account about unsafe behaviour, and I accept that others can also call me to account about unsafe behaviour.		Choose to be safe together
I only start with my work after I have been instructed correctly (formally). I follow these instructions.		Sign up for safety Stick to the plan
I work with approved equipment and only if I am authorised to use it.		Competence starts with the card
I use my compulsory personal protection equipment.		PPE keeps you safe If you wear it
I do not work with installations or cables that are charged, unless I am authorised to do so.		No permit No dig No pins
I exclusively give safe instructions and exclusively follow safe instructions.		Safety is a team game
I do not work when I am under the influence of drugs, medication or alcohol.		D&A Keep dry Keep clean
I always use the designated access routes and keep them clear at all times		Choose the safe path Not the quick one
I always use the welfare facilities provided and keep them clean and tidy		Respect your Own welfare
I keep my workplace clean, safe and tidy.		Tidy site Safe site

Rule	Logo	Strapline
I never enter an exclusion zone (Lifted loads)		Lifted loads Look up Let go
I never enter an exclusion zone (Load release)		Secured materials Release with caution
Always drive safely with your phone off and seatbelt on		Drive safely Phone off Belt up
I work with approved equipment and only if I am authorised to use it.		Defective plant? Report it
Never use plant or equipment unless you are authorised, competent and it is safe to do so		Switch off and secure
Never use your mobile phone unless you are in a designated safe location		Safe answer Safe call
Never alter edge protection or scaffold unless you are authorised, competent and it is safe to do so		Hold onto handrails

These rules are common sense and easy to follow
Failure to follow them may lead to disciplinary action or your removal from site
And remember ‘Your Safety is My Safety’

Schedule A5.3 Rules for Contaminated Land or Red Sites

Be on the lookout for:

- Signs of contamination during boring, excavating, soil stripping and similar operations (these could include discoloured soil, unexpected odours, a fibrous texture to the soils (e.g., asbestos), presence of foreign objects (e.g. chemical/oil, containers/waste), evidence of previous soil workings, underground structures or waste pits, evidence of made ground, old drain runs and contamination within buildings).

If contamination is suspected:

- Work will be stopped immediately.
- The discovery will be reported to the Agent who will seek expert advice and provide guidance on required controls / mitigation.
- The area will be sealed off to contain spread of contaminants.
- A risk assessment will be carried out to minimise the risk to health and safety of site workers. This will identify acceptable working methods, PPE, contact, and other required procedures.
- Any unexpected, contaminated land that has been disturbed by construction activities will to be dealt with as hazardous waste and disposed of to a suitably licensed site in line with the relevant waste management regulations;
- Ensure that the suspected contamination is tested and characterised and agree changes to the existing site proposals and method statements.

Known areas of contamination

Due to the variable nature of the hazards related to this type of work a risk assessment is required to detail the controls required. This involves in-house or consultant expertise.

The controls cover:

- site set up and security
- personal protective equipment
- health surveillance
- sampling regime
- training
- monitoring of controls

Schedule A5.4 Rules for handling and disposal of sharps

- Never handle discarded needles or syringes – unless you are trained to do so and have the correct equipment
- Warn others close by to stay away
- If safe to do so, stay close to it and report it to your supervisor
- If you are not able to stay close to it highlight it if possible
- Report it to the Supervisor

In the event of contact with a discarded needle encourage the puncture injury to bleed and wash well under cool running water with soap and cover with a dry (sterile) dressing. Seek medical advice as soon as possible, within 48 hours at the nearest local Accident & Emergency department.

Disposing of sharps

- Place needles and syringes into a sharp's container. Always use tongs to pick up
- Dispose of as clinical waste

Schedule A6 Emergency procedure - injury, dangerous occurrence or significant incident

In the event of an accident:

- Do not endanger your own life.
- Ensure that the injured person will not come to further harm.
- Notify the site office of:
  - the injured person's name and/or employer
  - location
  - type of incident
  - likely injuries
  - special requirements

The site office will:

- contact the first aider
- call an ambulance and/or other emergency services by dialling 999
- ensure access route is cleared
- arrange reception of ambulance/fire brigade/police at the nearest public road
- direct emergency services to location
- provide injured person’s information to the emergency service
- notify injured person’s employer if a subcontractor
- contact divisional director and area health and safety advisor
- initiate for cause drug and alcohol screening

The first aid kit is held in the site office and first aiders work vans.

The site address is:

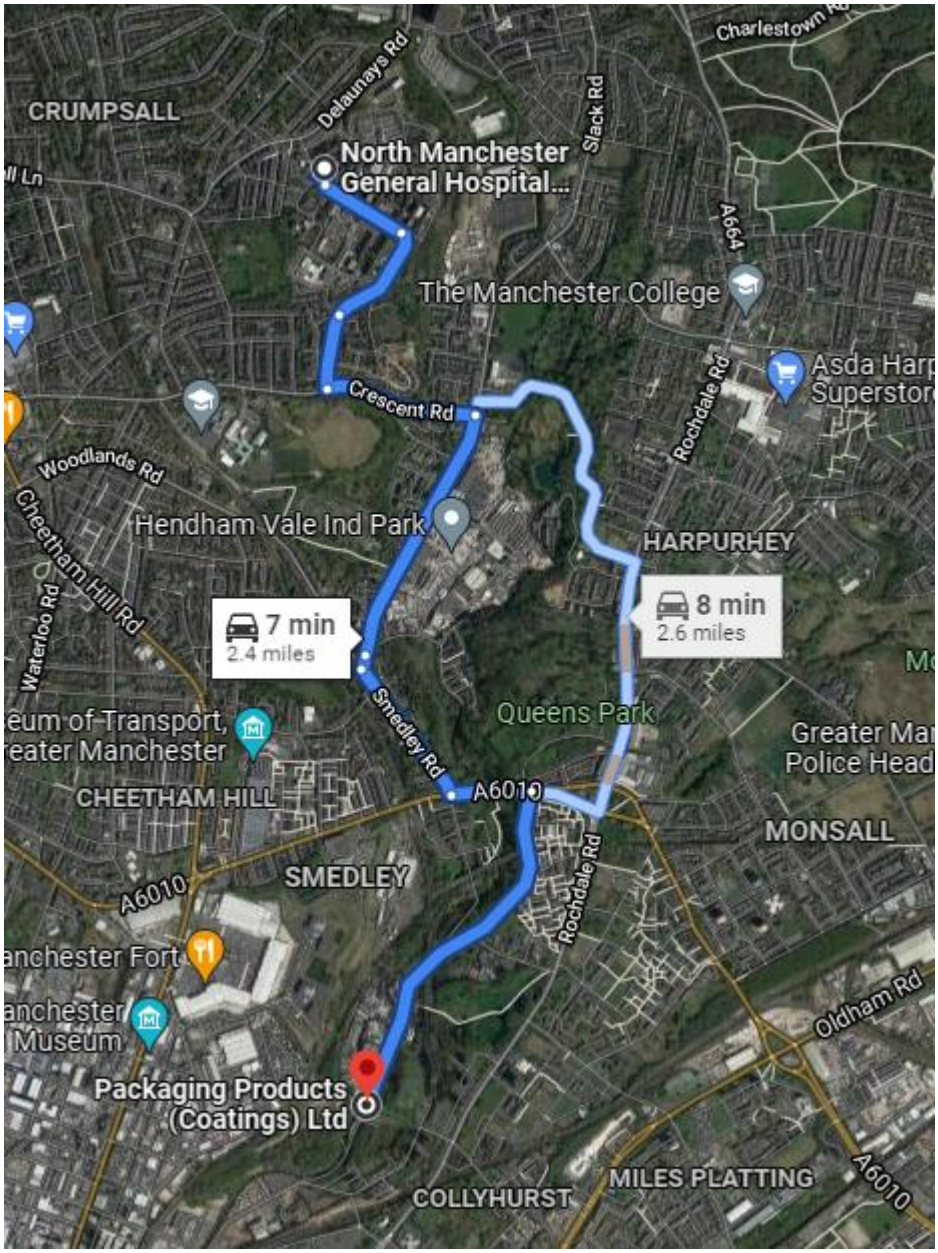
BAM Nuttall,
Site Office,
Hargreaves Street
Manchester,
M4 4EJ

What3words: ///mats.mental.post

Hospital Locations

North Manchester General Hospital

Address:- 151 Delaunays Road, Crumpsall, Manchester, M8 5RB
Telephone:- 0161 7954567
Opening Hours:- 24/7
Description:- Primary accident and emergency centre serving the project



Ancoats Primary Care Centre

Address;- Old Mill Street, Manchester, M4 6EE
Opening Hours:- 0900 to 1500
Description:- Ancoats Primary Care Centre is a drop-in service for people who need URGENT care for minor injuries and illness. The centre should be used where you are unable to get an appointment with your own GP and where you need to be seen the same day. It is intended as an alternative to going to A&E - which is for emergencies only.

Emergency procedure – fire

In the event of a fire in the site offices or other site accommodation:

- Alert all personnel of fire, evacuate all site offices and other units and assemble at the site compound assembly point.
- Do not stop to collect personal belongings.
- Contact the emergency services by dialling 999 or ensure that someone else does.
- Use appropriate fire extinguishers to contain or extinguish the fire **ONLY** if trained to do so.
- Do not put yourself or others at risk.
- Do not attempt to re-enter offices until approval is given by a senior member of staff.

In the event of a fire on site:

- Leave the area and assemble at the site compound assembly point.
- Notify a member of staff at the site offices.
- Use appropriate fire extinguishers to contain or extinguish the fire **ONLY** if trained to do so.
- Do not put yourself or others at risk.
- Do not return to the area of the fire until approval has been given by a senior member of staff.

The site office staff must:

- call the fire brigade by dialling 999 when informed of a fire
- ensure the access route is cleared
- arrange reception of fire brigade at the nearest public road
- direct emergency service to location

The site address is:
BAM Nuttall,
Site Office,
Hargreaves Street
Manchester,
M4 4EJ

What3words: ///mats.mental.post

Adjust or add to make site specific

Emergency procedure – confined space rescue

Prior to normal entry into a designated 'confined space' check:

- first aid and fire extinguisher readily available by entrance.
- underground and external communication systems available and operational
- names/numbers of persons entering/leaving confined space are logged
- atmospheric testing has indicated it is safe to enter
- each person entering confined space is wearing full body harness and carrying escape breathing apparatus set
- top man is in attendance
- permit to work certificate (SF 901) is complete
- safe means of access is available for emergency services

If an emergency condition occurs:

- evacuate the confined space immediately
- do not attempt to rescue a collapsed person unless they can be moved to safety immediately
- ensure ‘top man’ summons fire brigade and ambulance by dialling 999 giving exact location and access route
- send a person to direct emergency services to location
- notify the agent

ONLY if you have had the necessary training and if a rescue kit and breathing apparatus are available:

- re-enter to attempt a rescue
- use forced air ventilation system to improve atmosphere
- take drag sheets and lifeline(s) into confined space
- ensure two people are available to assist
- have resuscitator and first aid kit available

The site address is:

BAM Nuttall,
Site Office,
Hargreaves Street
Manchester,
M4 4EJ

What3words: ///mats.mental.post

Emergency procedure – pollution incident

In the event of an oil, fuel or silt pollution incident, take action to:

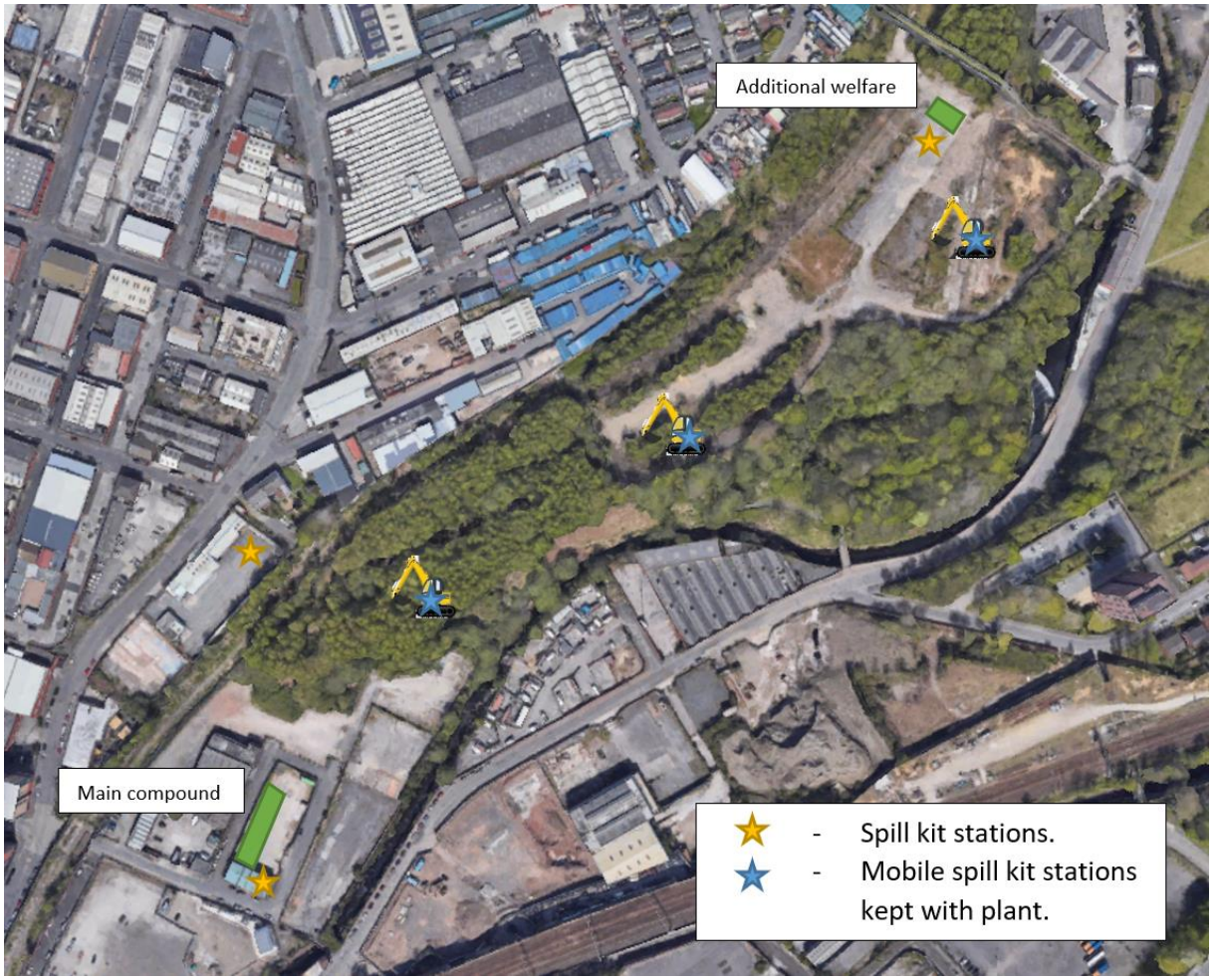
Raise the alarm	you may need assistance
Identify the source	what risks are involved, can you handle it yourself or are the emergency services required?
Protect yourself	are you wearing the correct PPE to deal with the incident?
Help any injured	but do not put yourself or colleagues at further risk
Stop the source	prevent further pollution if safe to do so by plugging leaks, righting drums, closing valves or turning off pumps
Contain the pollution	use emergency materials held on site and ensure that the pollution cannot escape by blocking drains, or creating a trench or bund to protect rivers and other watercourses
Prevent spread	if the pollution has already entered water, prevent its further spread downstream using booms for spills or silt fencing for silt
Notify your supervisor	as soon as it is possible to do so
Clean up	using appropriate absorbent materials or skimmers
Dispose of contaminated materials	used clean up materials will be classed as ‘hazardous’ or ‘special waste’
Restock	emergency clean up materials should be replenished and restocked following their use

In the event of a major spillage to water (an incident that the project team cannot handle or contain) contact your environment advisor for further guidance and advice.

Emergency spill kits and absorbent materials are located at:

- Creamline dairy entrance
- Plateau welfare
- Hargreaves Street compound

Mobile spill kits also kept with all machines.


Additional welfare
Main compound
- Spill kit stations.
- Mobile spill kit stations kept with plant.

Emergency procedure – person in water

In the event of a person falling into water:

- Raise the alarm by an appropriate means such as
  - shouting ‘person in water’
  - sounding a klaxon
  - continuously sounding of a crane or vehicle horn
  - summoning the safety boat via site radio
- Keep the person in view.
- Make your way to the nearest lifebuoy station. Keeping hold of the end of the line, throw the buoy or grabline to the person in the water, if they can reach it. If not, let a loose lifebuoy float downstream with them.
- Provide assistance by drawing in the lifeline until the person is at a landing point. If the landing point is difficult, do not attempt to pull the person out – call for assistance.
- Once the person has been recovered from the water, keep them warm until transport is available to take him to the first aid station.
- Whilst giving priority to the rescue, send a message to the main office as soon as possible to enable coordinated support. Notify the office of:
  - the person’s location
  - likely injuries, if any

Employees are advised not to make a rescue attempt by entering the water unless they have been trained in life-saving techniques.

List of key personnel and organisations for emergency and liaison		
Name	**Position**	**Location**
G Farrier	Divisional director	Newcastle
Kate O'Connell	Operations Manager	Manchester
Neil Peters	Project Manager	Manchester
Andrew Green	Design Manager	Manchester
Stephen Donaldson	General foreman	Manchester
Andrew Campbell	Agent	Manchester
John Annett	Sub-Agent	Manchester
Mark Cullen	Health and safety advisor	Leeds
Scott McGuinness	Behavioural Safety Advisor	Calder Valley/Manchester
Declan O'Shea	Works Manager	Manchester
Eddie Duncan	Environment advisor	Leeds
Rebecca Stone	Project Stakeholder Engagement & Social Value Manager	Manchester
Freya Jepson	Public relations	Camberley
24HR emergency contact number		

Emergency liaison	
Organisation	**Contact (name)**
Incident co-ordinator	Neil Peters
Client	Matt Ralph
Principal designer	Andy Green
Fire	N/A
Police	N/A
Hospital	Manchester Royal Infirmary Accident & Emergency Department, Upper Brook Street, Manchester, M13 9NZ
HSE	Merton Road, Bootle, L20 7HS
EHO	TBC
Environment Agency	TBC
Network Rail	TBC
Local authority	Matt Ralph
Gas supplier	Cadent Gas
Electricity supplier	Electricity Northwest
Telecom	BT
Water	United Utilities

Schedule A7 Storage / Management of hazardous substances

Storage / management of hazardous substances / Summary of COSHH Assessments							
Hazardous substances to be stored on site	**Storage arrangements**	**Volume of substance**	**Assessment available/ Expiry Date of assessment**		**Briefing arrangements**	**Health monitoring**	**Exposure monitoring**
HVO Diesel	Locked bowser in bunded storage areas	5000L static	Yes		Activity Plan Briefing as required	Site Supervision	TBC as per Sypol COSH Assessments
Marker Paint	Site stores, away from heat source.	Aerosol	Yes		Activity Plan Briefing as required	Site Supervision	TBC as per Sypol COSH Assessments
Petrol	Clearly marked fuel container inside COSHH store on drip tray	25L	Yes		Activity Plan Briefing as required	Site Supervision	TBC as per Sypol COSH Assessments
Cleaning Products	Cleaner's store	Various	Yes		Activity Plan Briefing as required	Site Supervision	TBC as per Sypol COSH Assessments
Ready Mix Concrete	N/A – Delivered as required	As required	Yes		Activity Plan Briefing as required	Site Supervision	TBC as per Sypol COSH Assessments

Excavated contaminated land storage area

A designated area for the contaminated material excavated during the earthworks phase of the project will be established (in the RB05a shown below).

The area will be levelled off and an impermeable layer of material (visqueen) will be laid over the area. A bund of material will be created around 3 sides of the perimeter of the area and the impermeable layer will be incorporated within the bund to create a sealed area. The fourth side will be created with a ramp for access to allow the tipping of material within the bunded area.
This will ensure that no water runoff from the area can occur and prevents possible spreading of contaminated materials outside of the quarantined stockpile area.

Heras fence panels will be placed around the perimeter of the bunded area with an access gate for access and egress.

Spoil stored within the area will be covered with a waterproof sheeting (visqueen) to prevent/reduce water from ponding within the area and waterlogging the stored material.

Managing Surface Water Runoff and Groundwater during works

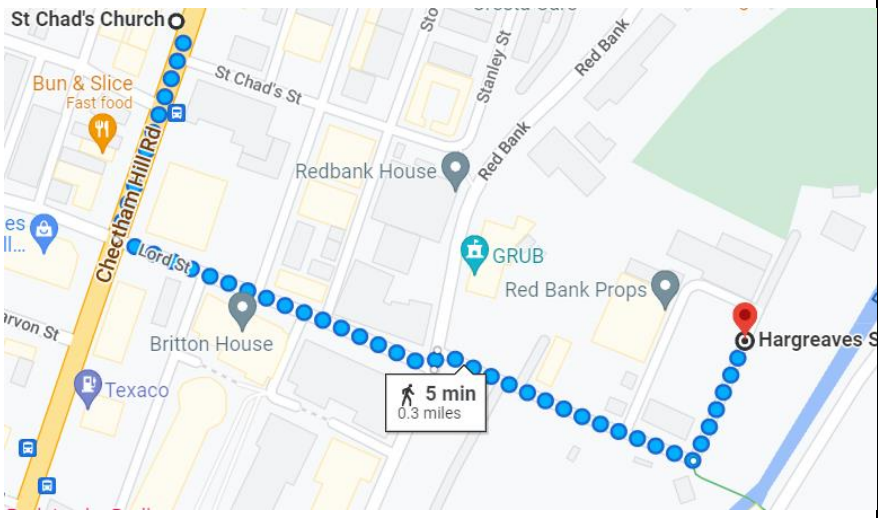
Any groundwater that may be discovered whilst excavating/stockpiling material of contamination will be tested, and either pumped across dry ground away from any receptors. Or if the sampling shows the water as containing contaminants or pollution as defined in the CWRA it will be pumped to a large holding tank ready for disposal via an authorised waste disposal facility.

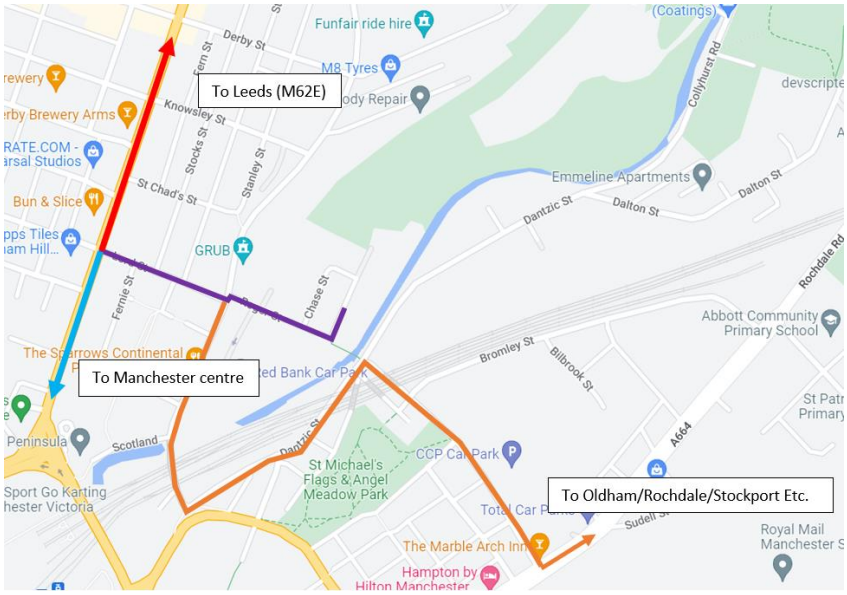
Surface water runoff will be controlled using a series of temporary grips, and trenches that will prevent the water from picking up suspended solids, contaminants and remain 'clean' . The mitigation of this surface water may vary based on location and the water should be prevented from reaching the River Irk where possible. Prior to discharge to sewer it may be necessary to pump the water to a settling Lagoon, or series of silt trap, where any suspended solids will drop out prior to discharging to sewer. Alternatively during the drier summer months, the water may be used to supress dust on the site and be used to condition dry materials and allow for better consolidation and compaction.

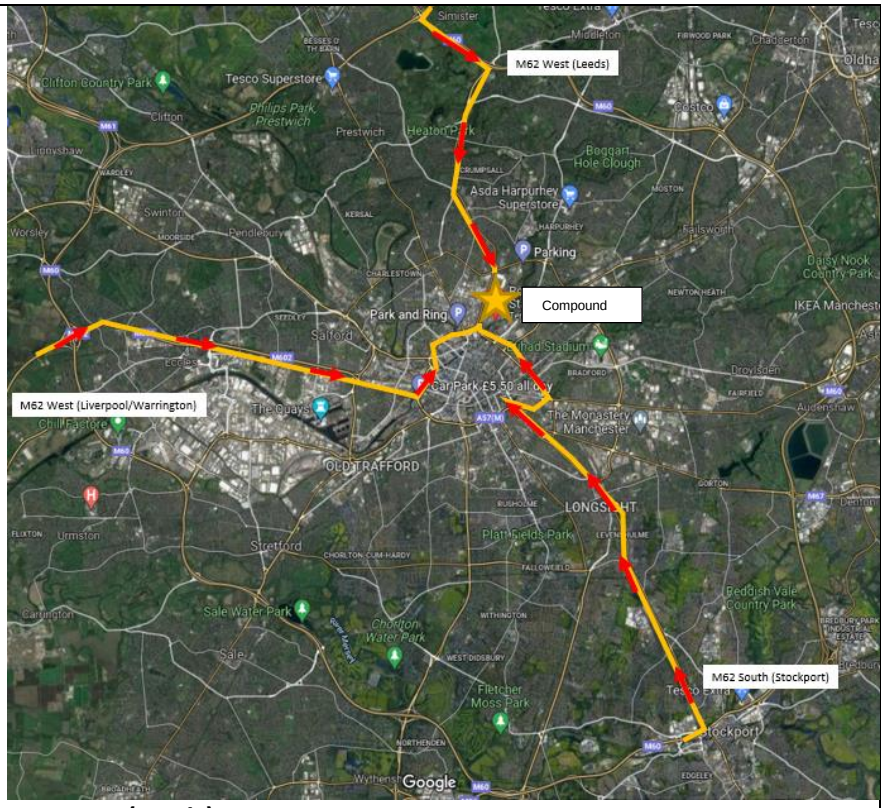
Any excess surface water will be discharged from site via a consented point within the site boundary to the sewer network. This temporary discharge consent has been granted on the proviso that it has been sampled and tested to the United Utilities thresholds as detailed in the temporary discharge consent obtained for the VNIF project.
Separate authorisation will follow from the Environment Agency if the water will be discharged via the permanent outfall to the River Irk as the permanent drainage is installed and commissioned.



Schedule A8 Works Transport Plan

Project Title:	Red Bank Neighbourhood, Victoria North HIF Infrastructure Project	**Contract No:**	BAA.2210
Prepared By:	John Annett	**Date:**	15th August 2022
BAM Project Manager:	Neil Peters	**BAM Manager Contact No:**	[redacted]
Local Traffic Authority:	Manchester City Council	**Local Traffic Authority Contact No**	TBC
Main Compound Address:	BAM Nuttall, Site Office, Hargreaves Street, Manchester M4 4EJ	**Satellite Address**	N/A
Main Office Establishment for Staff & Visitors:	BAM Nuttall, Site Office, Hargreaves Street, Manchester M4 4EJ		
Site welfare Parking Rules:	**The following Rules Apply When Visiting the Compound:** ○ All Vehicles to take care when driving to the site compound – Max 5mph ○ No vehicles are to be left/parked on double yellow lines around the compound. ○ Surrounding roads are to be kept clean at all times – Road Sweepers Used if Req'd. ○ No delivery vehicles or HGVs to deliver to site before 8am or after 4pm ○ All Vehicles to follow Signage ○ All vehicles to use one way system ○ All vehicles to reverse park		
Pedestrian Access & Bus Routes:	 **Pedestrian Route:**		

	○ Multiple bus stops within 15-minute walk of the compound on Hargreaves Street ○ Use existing public footpaths and crossing points ○ Use pedestrian walkways within compound area
Vehicle Access Routes into Compound:	 ○ Access can be gained from Red Bank, down Roger Street and then left at the end on to Hargreaves Street. ○ ALL vehicles must fully enter the secure compound area without blocking the gate or road. ○ No parking on the double yellow lines. ○ P&P Bridge and other delivery routes are to be kept clean and clear at all times
Main Routes from Motorway to compound:	



M62 East (Leeds):

- Leaving the M60 at J18, head South onto the M60
- Leave M60 at J19 East onto Middleton Road
- Continue south for approximately 1.5 miles where you come to a crossroads
- Turn left onto A665
- Continue for South for a further mile and turn left only Smedley Lane.
- Continue until you hit the T junction and turn right onto Smedley Road.
- Continue until you hit the T junction and turn left onto A6010.
- Continue 200m and turn right onto Collyhurst road.
- For specified deliveries, turn right onto P&P bridge and the Compound is on the left-hand side. For the offices, follow the road towards the city centre.
- Follow the road until it turns under the railway and then comes back on itself up Red Bank hill.
- Turn right down Roger Street and follow it to the end.
- Turn left on to Hargreaves Street and go through the compound gates.
- Turn into the compound and Park your vehicle in the designate area – Parking or Deliveries
- All delivery vehicles must report to the welfare cabins for further direction and all personnel must sign in
- Reverse Parking at all times

M62 West (Liverpool)

- The M62 merges into the M602, continue on this road which will then merge into A57 Regent Road.

	○ Turn left onto Ordsall Lane, continue until you reach a T junction. ○ Turn left at the junction and head north on the A6042/Ring Road. ○ Continue until you reach another T Junction, with Manchester Arena on your right. ○ Turn right and continue on the ring road. ○ Turn left onto A664. ○ Turn Left onto Dantzic street and continue veering right and proceed on Dantzic street. ○ Continue around over the river and under the railway to Red Bank. ○ Turn right down Roger Street and follow it to the end. ○ Turn left on to Hargreaves Street and go through the compound gates. ○ Park your vehicle in the designate area – Parking or Deliveries ○ All delivery vehicles must report to the welfare cabins for further direction and all personnel must sign in ○ Reverse Parking at all times **M60 South (Stockport)** ○ Come off the M60 at Junction 1 ○ Head North on the A6 Stockport Road for approximately 5 miles ○ Turn right at the Stockport Road/Devonshire Street cross roads (McDonald's is on the right) ○ Continue on the A665 Devonshire Street which merges onto Great Ancoats Street and then it merges to the ring road and finally it merges to Cheetham Hill Road. ○ Turn right onto A664. ○ Turn Left onto Dantzic street and continue veering right and proceed on Dantzic street. ○ Continue around over the river and under the railway to Red Bank. ○ Turn right down Roger Street and follow it to the end. ○ Turn left on to Hargreaves Street and go through the compound gates. ○ Park your vehicle in the designate area – Parking or Deliveries ○ All delivery vehicles must report to the welfare cabins for further direction and all personnel must sign in ○ Reverse Parking at all times
Construction vehicles	○ All construction vehicles leaving site must have wheels checked for stones prior to existing site and entering onto the public highway. ○ All loads to be sheeted prior to transit where possible. ○ Load may be left unsheeted if the load will not blow off in transit, does not produce dust and the load does not need to stay dry. ○ All Construction vehicles to be part of FORS.

	The Fleet Operator Recognition Scheme (FORS) is a voluntary accreditation scheme for fleet operators which aims to raise the level of quality within fleet operations, and to demonstrate which operators are achieving exemplary levels of best practice in safety, efficiency, and environmental protection.	
	Note: **A TM & Delivery Plan MUST be Sent Out with Order to ALL Suppliers Prior to Delivery Taking Place**	
Opening/Closed Times and Dates (If Applicable):	**Project Start Dates**	20th September 2022
	Project Completion Dates	April 2024
	First Allowable Delivery Time	8am
	Last Allowable Delivery Time	4pm
Additional Information	Different delivery entrances to site may be used depending on the programme of works. Ensure an up-to-date delivery plan is sent with every order, even for repeat deliveries.	

Section B Construction Phase Plan

B1.0 Foreword

This section of the plan should be read with section A and with the current editions of the schedules for **Section A and B**. Together these documents define the arrangements for achieving health and safety standards on the project. They form the construction phase plan required under CDM Regulations.

B2.0 Health and safety arrangements including welfare

B2.1 Fire safety - *SG11: Assessment of fire safety*

The fire safety co-ordinator gives attention to the prevention and limitation of the effects of fire by avoiding stocks of flammable materials and provision of adequate emergency instruction and arrangements.

On this project, the applicable arrangements for fire safety are detailed in **Table B2.1** below.

Table B2.1: Fire safety arrangements

Flammable substances	Fire extinguishers kept in site offices and vehicles
	Keep fire extinguisher available during working
Banned activities	Open fires on site
Hot work permits	Any activity that generates heat needs to be covered by a Permit
Smoking	No smoking on site, or in site vehicles
Waste	No combustible waste to be stored on site, and to be disposed of off-site at the end of each day to an appropriate point.
Fire points	TBC
Alarm	See Emergency Procedure – Fire within section A6
Emergency supply	N/A
High risk premises	No high-risk areas or premises identified
Accommodation	Site welfare vehicles to contain fire extinguishers
Personnel	
Fire marshal	*Joe Quinlan*
Fire co-ordinator	*Stephen Donaldson*

B2.2 First aid - *SG03: First aid*

The location of first aid equipment and names of first aiders are prominently displayed so that assistance can be obtained in the shortest possible time.

The specific arrangements for first aid are as detailed in **Table B2.2** below:

Table B2.2: First aid arrangements

Materials, equipment and facilities	
First aid boxes	Kept in Site Offices – how many
Travelling first aid kits	Kept within site vehicle – how many
First aid rooms	
Defibrillators	Defibrillator to be held within office & site vehicle
Personnel	
First aiders	Stephen Donaldson/Daniel King/John Annett Neil Peters, Mark Kori, Liam Chambers
Management of first aid equipment and supplies	Stephen Donaldson

B2.3 Site utility arrangements - *SG20: Temporary electrical installations*

This section describes the arrangements for planning site requirements for utilities to meet site requirements. Wherever practicable information on depths and location should be provided.

Table B2.3: Site utilities

Utility	Requirement	Inspection and Test Requirement	Routine inspection	Supplier
Electricity (mains)	*Yes*	----	----	*ENWL*
Electricity (generated)	*Yes (temporary until full power connected).*	*Generator serviced as per suppliers' instructions*	*Generator serviced as per suppliers' instructions*	*Nixons*
Gas	*No*	----	----	----
Water/Wastewater	*Yes*	*TBC*	*TBC*	*UU*
Telecom	Yes	----	----	N/A
Utility supply in emergency situations	*Yes*	TBC	TBC	Back-up generator?

B2.4 Welfare arrangements - *SG21: Welfare facilities*

The agent ensures the provision of suitable facilities at all stages of the project and their maintenance to the highest possible standards of cleanliness and hygiene.

Outline arrangements are defined in **Table B2.4** below**: and** on a sketch inserted in **Schedule B1**

Table B2.4: Outline welfare arrangements

Toilets	Available in main compound and in various locations around site (TBC).
Washing	Main compound.
Changing	Main compound.
Rest/food	Main compound.
Drinking water	Main compound (additional locations may be implemented during exceptional heat).
Waste segregation	Separate labelled waste skips.
Responsibility for maintenance	BAM supervisor to arrange and coordinate.

B2.5 Zones – *NS1.5: Zonal working*

Certain areas of the project will have no or restricted access throughout the project and will not be picked up any specific activity plan. This is due to Client requirements or the hazards in these areas. Areas with no access are exclusion zones. Areas of access limited to certain people are restricted zones.

Zonal areas not associated with a specific construction activity on this project are listed in **Table B2.5** below.

Table: Project Zones

Type of Zone	**Description**
Restricted Zone – Yellow	Area of tree clearance
Exclusion Zone – Red	Area around chipping plant
Restricted Zone – Yellow	Zone around excavation works
Restricted Zone – Yellow	Zone in area of earthworks activities
Exclusion Zone – Red	Zone around invasive species
Exclusion Zone – Red	Slew area of excavators
Restricted Zone – Yellow	Lifting Operations

Type of Zone	Description
Exclusion Zone – Red	Lifting Operations (slew radius of crane)
Restricted Zone – Yellow	Vehicle routes & haul routes
Exclusion Zone – Red	Within 2m of the river
Exclusion Zone – Red	All haul roads/vehicle routes.
Exclusion zone - Red	Drainage excavations/confined spaces (before they have been deemed safe and an SF901 – Permit to enter (confined space) permit has been issued.
Restricted zone - yellow	Drainage excavations/confined spaces (after they have been deemed safe and an SF901 – Permit to enter (confined space) permit has been issued.)
Restricted zone - yellow	All work areas with plant movement. Entry to be authorised by banksman/supervisor.
Task specific exclusion zones to be specified in RAMS/Activity plans	Machine movements
Exclusion Zone - Red	Trade effluent water discharge area and pumping equipment.

B3.0 Health Management - *NP1.17: Management of occupational health*

The following hazards to health resulting from activities to be carried out on site are listed in **Tables B3.1** and **B3.2** below. Arrangement for health assessment and monitoring linked to the hazards identified are detailed in **Table B3.3** below:

B3.1 Noise - *NP1.5: Control of occupational noise*

Table B3.1: Occupational Noise

Operation	Anticipated noise level (dBA)	Actual noise level (dBA) At 10m	Control	Time Anticitpated	PPE	Time Per day average (estimated)	Impacted Parties
Excavators – General Excavation	(outside) 99 dB(A) (inside) 71db(A)	76dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	4 Hours	Construction Workers General Public at site perimeter.
Excavators – Loading Lorries	(outside) 99 dB(A) (inside) 71db(A)	79dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	1 Hour	Construction Workers General Public at site perimeter.
Excavators – Breaking Up Concrete	(outside) 99 dB(A) (inside) 71db(A)	90dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	0.5 hours	Construction Workers General Public at site perimeter.
Compactors/rollers - Compaction of material	Standard 84dba Compacting 106dba	79dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	1 hour	Construction Workers General Public at site perimeter.
Dumpers – 25t Moxy Empty	(outside)			7:30 – 18:00	Yes	3 hours	Construction Workers

	104 dB(A) (inside) 73db(A)	87dB(A)	PPE, restricted zone				General Public at site perimeter.
Dumpers – 25t Moxy Tipping	(outside) 104 dB(A) (inside) 73db(A)	79dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	3 hours	Construction Workers General Public at site perimeter.
Concrete Mixer Truck- Discharging	(outside) 104 dB(A) (inside) 73db(A)	75dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	1 hour	Construction Workers General Public at site perimeter.
Generators	(outside) 75 dB(A)	65dB(A)	Reviewed on Site and managed accordingly	7:30 – 18:00	No	10 hours	Construction Workers General Public at site perimeter.
Abrasive wheels – Stihl Saw	(outside) 98 dB(A)	91dB(A)	PPE, restricted zone	7:30 – 18:00		0.5 hours	Construction Workers General Public at site perimeter.
Chainsaws	(outside) 106db (A)	94dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	4 hours (at start)	Construction Workers General Public at site perimeter.
Chippers	(outside) 125db (A)	87dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	8 hours (at start of project)	Construction Workers General Public at site perimeter.
Strimmer	(outside) 101db (A)	91dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	2 hours (at start of project)	Construction Workers General Public at site perimeter.
Blower	(outside) 100db (A)	85dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	2 hours (at start of project)	Construction Workers General Public at site perimeter.
Pole pruner	(outside) 93db (A)	91dB(A)	PPE, restricted zone	7:30 – 18:00	Yes	2 hours (at start of project)	Construction Workers General Public passing at site perimeter.

B3.2 Vibration - *SG08: Control of occupational vibration*

Table B3.2: Occupational Vibration

Operation	Anticipated vibration level (m/s^2)	Tools used	Control	Time (minutes)
Tree felling	3.7	Chainsaw - Stihl - MS261	HAVS Assessment completed HAVS watch to be worn to monitor exposure	2hrs 40mins
Tree felling	3.7	Chainsaw - Stihl - MS262	HAVS Assessment completed HAVS watch to be worn to monitor exposure	2hrs 40mins
Tree felling	3.2	Chainsaw - Stihl - 201tv	HAVS Assessment completed HAVS watch to be worn to monitor exposure	3hrs 35mins
Tree felling	3.5	Strimmer - Stihl - FS460	HAVS Assessment completed HAVS watch to be worn to monitor exposure	3hrs
Tree felling	3.5	Blower - Stihl - BR600	HAVS Assessment completed HAVS watch to be worn to monitor exposure	3hrs
General cutting activities	4.2	Stihl saws	HAVS Assessment completed HAVS watch to be worn to monitor exposure	2hrs
Compaction activities e.g., stone, tar	TBC	Pneumatic whacker plate	HAVS Assessment completed HAVS watch to be worn to monitor exposure	TBC
Aerating concrete pours	TBC	Concrete pokers	HAVS Assessment completed HAVS watch to be worn to monitor exposure	TBC

B3.3 Dermatitis

Table B3.3: Dermatitis

Operation	**Hazard**	**Control**	**PPE**
Concreting/	Cement	Low chromium VI Avoid exposure Briefings/training on the risk associated with cement exposure	Full skin coverage with impermeable clothing
Diesel		Outdoor use only, all containers kept closed when not in use, wash after	Full skin coverage with impermeable clothing

		exposure, all operatives briefed on COSHH Assessment prior to use	
Petrol		Outdoor use only, all containers kept closed when not in use, wash after exposure, all operatives briefed on COSHH Assessment prior to use	Full skin coverage with impermeable clothing
HVO fuels		Outdoor use only, all containers kept closed when not in use, wash after exposure, all operatives briefed on COSHH Assessment prior to use	Full skin coverage with impermeable clothing

B3.4 Health assessment and monitoring arrangements *- NP1.17 Management of occupational health*

Health assessment monitoring arrangements for this project are defined in **Table B3.4** below:

Table B3.4: Health assessment monitoring arrangements

Hazard	By whom	Frequency
Noise	Competent person Occupational hygienist	Baseline health assessment within 3 months of employment and then annually thereafter (More frequently for specific individuals)
Vibration	Competent person Occupational hygienist	Baseline health assessment within 3 months of employment and then annually thereafter (More frequently for specific individuals)
Lead	N/A	N/A
Asbestos	Air Monitoring, during works	Each shift

B3.5 Manual handling - *SG22: Manual handling*

Exposure to manual handling, and the associated risk of injury, particularly back injury must be controlled. Manual handling training is given to all personnel at risk and the results of assessments are notified to those involved in the activity.

The activities listed in **Table 3.5** are likely to require a manual handling assessment.

Table B3.5: Manual handling

Activity likely to require a manual handling assessment
Site mobilisation and de-mobilisation
Handling Slung Loads

Activity likely to require a manual handling assessment
Demolition works
Tree clearance
Drainage materials
Ducting/chambers/lids
Kerbing
Ironwork
Edgings
Paving stones
Bags of sand/aggregate/cement/topsoil
Block paving

B3.6 COSHH (Chemical and biological hazards including dust and fumes) - *NP1.18: COSHH SG18: COSHH*

The COSHH coordinator, ensures that all reasonable steps are taken to ensure that exposure of employees and others to hazardous substances is assessed and prevented or at least controlled to within statutory limits.

On this project, arrangements for storage of hazardous substances are detailed in **Schedule A7.**

B3.7 Temperature and weather protection for personnel on site

The following **Table B3.7** below details suitable and sufficient controls are in place to minimise the risks regardless of location.

Table B3.7: Weather Protection

Temperature and weather hazards	Control
High temperature	Operatives to be reminded at morning briefings to hydrate during day. Drinking water supplies to be provided at all site office locations. Operatives to be supplied with drinking bottle to allow to carry around work site. Where possible operatives to work in shaded areas and where possible additional shading to be created on static work areas to protect operatives. If required additional breaks to be incorporated into workdays and working hours adjusted where practical.
Low temperature	Where temperatures reach points where ice and frost are formed operatives during the prestart briefings will be reminded of the risks of low temperatures. The Agent/ Foreman will carry out an assessment of the site. From this the works on site will be approved to commence or be suspended if required. Where necessary the site team will first clear paths and apply anti slip material (grit) to prevent slips trips and falls. Water supplies to cabins to be protected (lagged) to protect from freezing.
Poor visibility	If visibility is poor prior to work commencing the Site Agent and Foreman will carry out an assessment of the site. From this the works on

	site will be approved to commence or be suspended until visibility improves.
Rain	Operatives will be reminded of potential slips trips and falls associated with wet weather during prestart briefings. Agent/Foreman to subscribe to the EA's flood warning service to allow advanced warning of heavy rainfall. For heavy rain Agent/Foreman will assess the site conditions and where necessary provide additional risk assessment or suspend works. Rain fall will also effect works within the culvert due to increased flows. Close monitoring of the weather forecast, and potential rain fall will be undertaken, and works will be planned taking consideration of potentially increased flows.
Snow	In the event of snow fall all footpaths will be cleared. If continuous then the Site Agent and Foreman will review the planned operations and where necessary, provide additional risk assessment or suspend works. Drying room temperature to be maintained to allow cloths to dry out. Agents/foreman to subscribe to the EA's flood warning service to allow advanced warning of heavy snowfall. Melting snow will also effect works within the culvert due to increased flows. Close monitoring of the weather forecast, and potential snow fall will be undertaken, and works will be planned taking consideration of potentially increased flows due to melting snow.
Humidity	Temperatures will be monitored, and additional breaks given to site team to allow intake of liquid. Operations will be monitored through their durations.
Wind	Wind speeds will be monitored in advance and the forecasts provided within the morning briefings. Any lifting operations will have risks associated with high wind speeds identified and suitable contingencies/guidance identified. For lifting operations winds speed of 12mps to be the cut off of operations.
UV protection	Factor 30 protection cream provided on site to provide UV protection. Operatives to be informed of daily UV levels in morning briefing and advised to apply protection cream. Full length arm sleeves advised to give additional protection. Where possible operatives to work in shaded areas and where possible additional shading to be created on static work areas to protect operatives.

B3.8 Fatigue

The planned working hours and monitoring regime on this site are given in the **Table B3.8** below:

Table B3.8: Fatigue management

	Dayshift		Nightshift		Control to minimise fatigue
	Hours worked	**Breaks**	**Hours worked**	**Breaks**	
Monday to Friday	07:30 to 1800	1/2hr mid-morning and 1/2hr lunch	No night working planned		Regular breaks depending on work type. Task rotation. Monitoring and recording of travel by all workforce no more than 14hrs door to door. Monitoring of tasks and physical/mental demands paced on individuals.
Saturday – Works not planned at present but may take place if required.	7:30-17:30	10:00-10:30 & 13:00-13:30	No night working planned		Regular breaks depending on work type. Task rotation. No less than 1 day's rest in any 7 consecutive days or 2 in any 14 days
Sunday – Works not planned at present but may take place if required.	7:30-17:30	10:00-10:30 & 13:00-13:30	No night working planned		Regular breaks depending on work type. Task rotation. No less than 1 day's rest in any 7 consecutive days or 2 in any 14 days
Weekly / fortnightly break arrangements	N/A				

Information in relation to travel and working time should be recorded for all personnel.

B4.0 General arrangements that apply to the works

Other significant risks are covered in **Tables B4.1 to B4.20**. **Table B4.20** is provided to allow the agent to develop any customer requirements as defined in the pre-tender information, or other unusual risks that may be applicable to the works.

B4.1 Underground and overhead services - *NP1.3 Control of excavation in the vicinity of buried services*

The following information has been taken from the pre-construction information, service providers, Linesearch (www.linesearchbeforeudig.co.uk) and site surveys.

Any known to exist in the vicinity of the site are listed in **Table B4.1** below. With specific details held in the services register **Schedule B3.**

Table B4.1: Major underground / overhead assets

Identified major underground / overhead asset	Location	Activities affected	Control
UU combined Sewer	Plateau/Avenue	Digging, trade effluent water disposal.	Permit to dig in place prior to any breaking ground
Historic sewer network – derelict but still live	Plateau/Avenue	Digging	Permit to dig in place prior to any breaking ground
9 no. uncharted services crossing P&P bridge, easily disturbed by vibration.	P&P Access	Deliveries	Delivery plan to specify no offloading on the bridge
UU Combined Sewer	St Catherine's Wood	Digging, trade effluent water disposal.	Permit to dig in place prior to any breaking ground
None	Ridge View	None	Permit to dig in place prior to any breaking ground
Private sewer leading to Hargreaves Street	Red Bank Terrace	Earth works	Permit to dig in place prior to any breaking ground
None	Viaduct	None	Permit to dig in place prior to any breaking ground
Various. Please see trial hole logs for TH03,04 & 05, services include CW sewers, 6kv cables, LV Electrics, BT, Gas, water main, Gas, 33kv cables, gas main	Roger Street	Digging trial holes	Permit to dig in place prior to any breaking ground, using safe method of excavation using a Vacuum Excavator
Various. Please see trial hole logs for TH01 a/b/c & TH02, services include Virgin media, LV Electrics, BT, Gas, water main, CW sewers, 6kv cables	Red Bank	Digging trial holes	Permit to dig in place prior to any breaking ground, using safe method of excavation

Identified major underground / overhead asset	Location	Activities affected	Control
			using a Vacuum Excavator
Various. Services include , LV Electrics, BT, Gas, water main, CW sewer	Hargreaves Street	Setting up new site compound	Permit to dig in place prior to any breaking ground
Various. Please see trial hole log TH05, services include LV Electrics, BT, Gas, water main, CW sewer, 6kv cables	Chase Street	Digging trial holes	Permit to dig in place prior to any breaking ground, using safe method of excavation using a Vacuum Excavator

Responsibility for ensuring arrangements for safety in the vicinity of overhead services in accordance with BAM Nuttall procedures is that of a **Buried and Overhead Services Coordinator**, appointed by the agent, whose duties are described in the BAM Nuttall health and safety policy booklet.

B4.1.1 Services, isolation points and diversion work

In association with these works the following services shall be disconnected / connected:

Service	Location of services and isolation point(s)	Planned date for connection (c) or disconnection (d)
BT	Hargreaves Street compound	C Early December 2022
Electric	Hargreaves Street compound	C Early March 2023
Water	Hargreaves Street compound	C January 2023
Foul	Hargreaves Street compound	C November 2022

B4.2 Temporary works - *NP19: Control of temporary works*

A description of any erection sequences, temporary propping arrangement etc. taken from the pre-construction and designer information should be included here ensuring safe by design.

Table B4.2: Temporary Works

Temporary work requirements	Influence on the permanent structure	Controls	Access arrangements required
Site welfare foundations	N/A	Competent design and installation.	Location specific
Heras fencing	N/A	Competent design and installation.	Location specific

Haul Road	N/A	Competent design and installation.	Location specific
Drainage trenches	N/A	Competent design and installation.	Location specific
Crane pads	N/A	Competent design and installation.	Location specific
MH trenches	N/A	Competent design and installation.	Location specific
Bunded/Visqueen containment area for contaminated waste storage	N/A	Competent design and installation.	Location specific

Additional information in relation to temporary works are recorded on the temporary work register.
VNIF-BNL-ZZ-YYY-RE-WS-0001

B4.3 Working at height - *SG15: Working at height*

Table B4.3: Working at height

Activity	Height hazard	Controls	Monitoring and inspection
Site cabin mobilisation	Fall from height	Developed RAMS for works identifying procedures to be put in place and followed.	Before first use After adverse weather conditions Review and approval of RAMS (Activity plan). All persons to be briefed and Foreman to monitor works as they proceed to ensure compliance with documented plan of works.
Deep drainage excavation	Fall from height	Developed RAMS for works identifying procedures to be put in place and followed.	Before first use After adverse weather conditions Review and approval of RAMS (Activity plan). All persons to be briefed and Foreman to monitor works as they proceed to ensure compliance with documented plan of works.
Honey Street retaining wall works	Fall from height Falling objects	Developed RAMS for works identifying procedures to be put in place and followed.	Before first use After adverse weather conditions Review and approval of RAMS (Activity plan). All persons to be briefed and Foreman to monitor works as they proceed to ensure compliance with documented plan of works.
New retaining wall	Fall from height Falling objects	Developed RAMS for works identifying procedures to be put in place and followed.	Before first use After adverse weather conditions Review and approval of RAMS (Activity plan). All persons to be briefed and Foreman to monitor works as they proceed to ensure compliance with documented plan of works.

B4.4 Lifting - *NP1.1: Management of lifting operations*

All lifting operations are subject to a lift plan that describes a safe system of work. A schedule of lift plans is maintained. 04.3 Lift Plan

Responsibility for ensuring the establishment of this safe system of work is that of an appointed person (lifting), appointed by the agent.

Table B4.4: Lifting operations

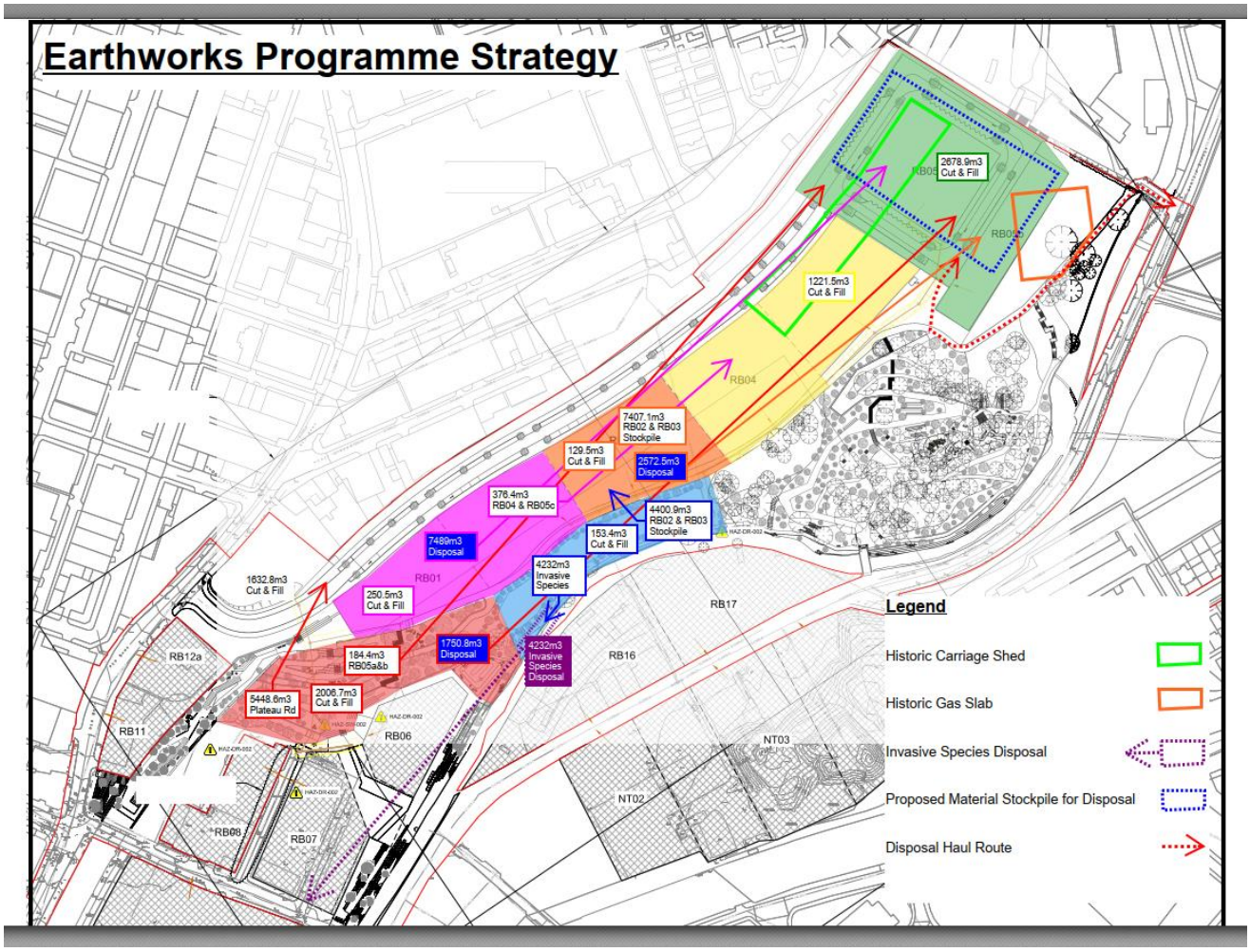
Lift Plan Reference	Type of lift	Ground / platform information
Installation of Site Cabins	Basic	Existing hardstanding areas
Off-loading deliveries	Basic	Existing hardstanding areas
Off-loading retaining wall structures	Basic	Prepared level firm ground on site
Lifting drainage & ducting elements	Basic	Existing hardstanding areas

B4.5 Excavation

Table B4.5: Excavation

Activity	Description	Controls / support arrangements	Monitoring arrangements
Bulk earthworks	Site wide cut and fill.	Specific Activity plan developed for works	Include compliance monitoring and inspection arrangements
Earthworks/clearance	Tree root clearance	Specific Activity plan developed for works	Include compliance monitoring and inspection arrangements
Drainage installation	Deep drainage excavations	Specific Activity plan developed for works	Include compliance monitoring and inspection arrangements
Ducting	Excavation	Specific Activity plan developed for works	Include compliance monitoring and inspection arrangements

Bulk Earthworks are as per the below strategy, materials marked straight for disposal will be placed in the blue dotted areas ready for removal off site.

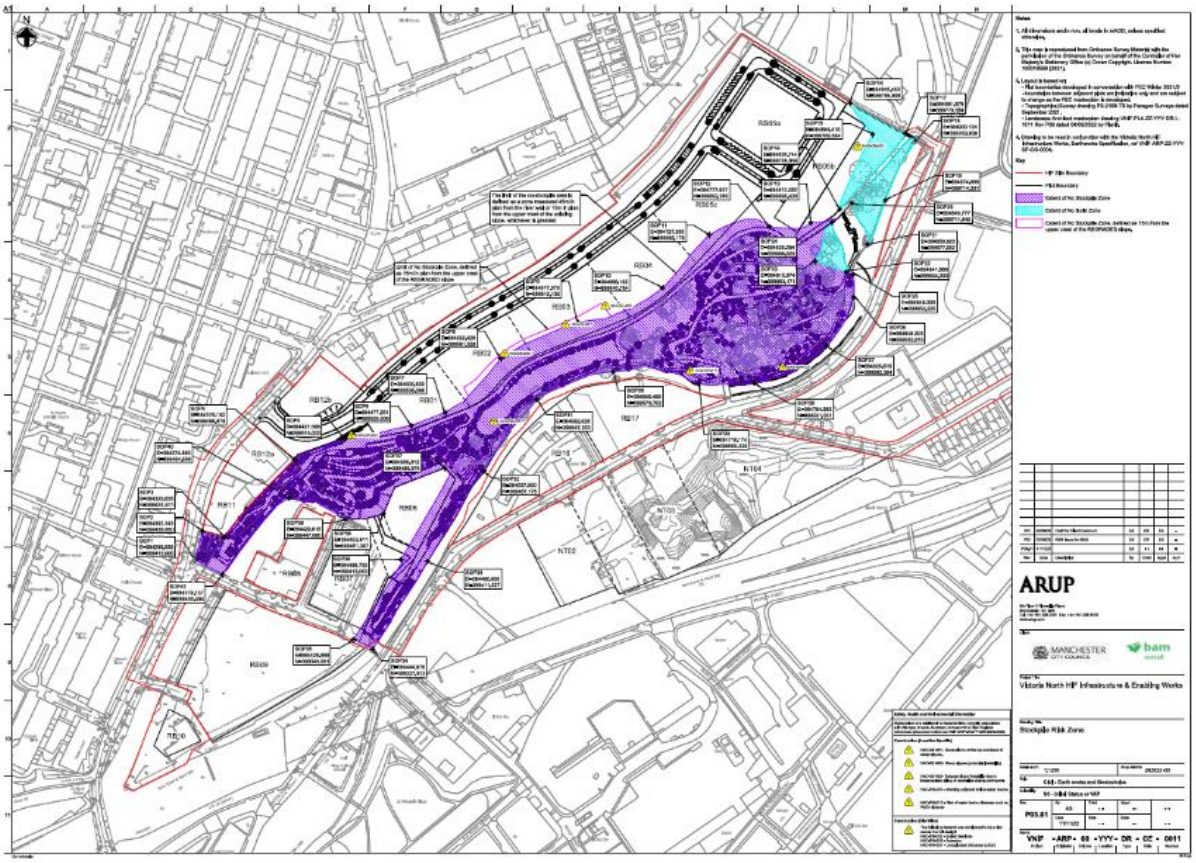


B4.6 Ground stability

Table B4.6: Ground Stability

Activity	Stability issue	Mitigation	Inspection
Works adjacent to riverbank	Potential for loose soils.	Visual inspection by competent operator prior to any plant being positioned close to the riverbank	Before use
Embankments	Potential for loose soils.	Visual inspection by competent operator prior to any plant working on embankments.	Before use
Earth works cuts	Potential for loose soils.	Visual inspection by competent operator prior to any plant working on embankments.	Before use

Stockpile Risk Zone



B4.7 Stability of existing structures

Table B4.7: Structural Integrity of existing structure

Activity and effect	Existing structure	Type of inspection
Haul road	Honey Street Retaining wall	Structural inspection to determine load bearing capacity to ensure plant and equipment and personnel are working within safe acceptable limits
Access & Egress	P&P Bridge	Structural inspection to determine load bearing capacity to ensure plant and equipment and personnel are working within safe acceptable limits
Access & Egress	St Catherine's Wood Bridge	3t weight limit.
Viaduct		Vibration monitoring and sound monitoring Movement monitoring with use of Total Station

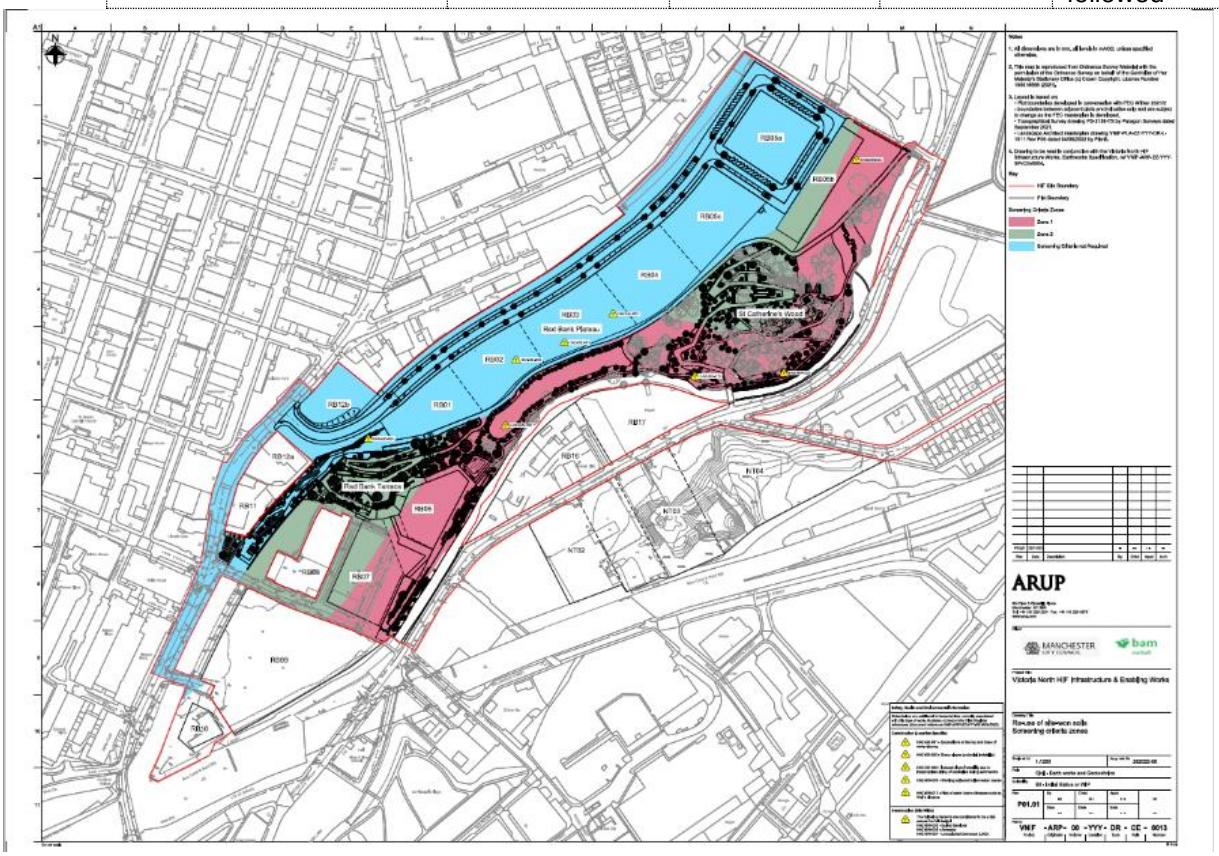
B4.8 Contaminated land

BAM Nuttall will investigate, excavate and dispose of any potentially contaminated areas in accordance with contaminated land, environmental and health and safety legislation.

Table B4.8: Contaminated Land

Signs of Contamination	Test Results *Actual Levels*	Contamination Identified	Exposure Level Health Maximum Level	Action Taken

Asbestos in stockpile @ CH200	*Positive ACM material confirmed by lab*	*ACM Cement Bound Sheeting*	TBC	Exclusion zone created . Material to be removed from site by specialist contractor as part of main works
Trade effluent discharge area	*Elevated levels of dissolved methane*	*Identified water source emanating from the ground at base of existing embankment*	TBC	Exclusion zone created. Currently engaged with EA & UU to investigate the source. Discharge permit currently in process to allow excavations in the area.
Contaminated Soils – general	*Elevated levels*	*Identified during GI and visible during site clearance works*	TBC	Exclusion Zone currently created. No digging of sub soils until clearance from Site Management, Materials management plan and Remediation strategy to be followed



Material Re-use criteria and screening zones.

B4.9 Working over or near water/drowning - *SG16: Work over or near water*

Table B4.9: Working over or near water / drowning

Activity	Location	Controls	Rescue Arrangements	Drill arrangement
Earthworks	P&P access, Ridge View, Red Bank Terrace	Visual inspection by competent operator prior to any plant being positioned close to the riverbank Specific Activity plan developed for works Exclusion zones in place to keep plant/people minimum 2m away from rivers edge	TBC	Prior to works commencing & monthly thereafter
Hydroseeding	Ridge View, Red Bank Terrace	Visual inspection by competent operator prior to any plant being positioned close to the riverbank Specific Activity plan developed for works Exclusion zones in place to keep plant/people minimum 2m away from rivers edge	TBC	Prior to works commencing & monthly thereafter
Invasive treatment	Ridge View, Red Bank Terrace, Union Plaza	Visual inspection by competent operator prior to any plant being positioned close to the riverbank Specific Activity plan developed for works Exclusion zones in place to keep plant/people minimum 2m away from rivers edge	TBC	Prior to works commencing & monthly thereafter
Describe the location e.g., river or inland waterway (use the MCA guidance 1837(M) for this. Describe the rescue arrangements and training of the crew including information on the type of boat to be used contact the local MCA office for advice. Provide a description of the works and controls to be put in place to minimise risk				

An assessment of the whole body of water to be used has been carried out and this forms the basis of the Water Safety Management Plan. The Water Safety Management Plan is located in Schedule B4.

B4.10 Piling

Table B4.10: Piling

Type of piling operation	Piling platform design	Laydown areas	Operational controls
Temporary Sheet Piles/Manhole boxes	*TBC*	TBC	*Segregation, noise, vibration, dust*
~~*CFA, Contiguous, Driven*~~	~~*Always required, provide details*~~		~~*Segregation, noise, vibration, dust*~~

B4.11 Lighting

Table B4.13 describes the lighting arrangements for all aspects for the work. Arrangements should be designed to minimise glare and provide suitable and sufficient lighting to allow work to be carried out safely.

Table B4.11: Lighting

Access	When required	Lighting arrangements
Car park	Hours of darkness / poor weather	Lighting towers to show spacing arrangements and route to pedestrian walkway
Office	Hours of darkness / poor weather	Sensor lighting to allow safe access to office building
Traffic and pedestrian routes	Hours of darkness / poor weather	Lighting tower
Work area	Hours of darkness / poor weather	Lighting tower
Work is planned to only take place during daylight hours	N/A	N / A

B4.12 Demolition and assembly including prefabricated components

B4.12.1 Demolition

Table B4.12.1: Work involving demolition

A description of demolition activities and associated check and control measures are stated in Tables B4.14.1a and B4.14.1b. Information in relation to temporary works is contained in section B4.2

Demolition activity	Information from demolition survey/ pre-construction information/designers	Temporary works required	Stability checks required in temporary and permanent condition	Operational controls to minimise risk
Partial demolition of Honey Street retaining wall.	Structural survey Material Thickness	Scaffolding? Edge protection?	N/A dismantled is 1m sections	Exclusion Zone, Dust suppression
Removal of Street Lighting columns	Trial Pit to base of column. Service searches	Exclusion zone, safe excavation	N/A removed in one section	Exclusion Zone

Table B4.12.1b: Competent personnel undertaking demolition

Organisation/ personnel carrying out demolition – supplier or in-house personnel	Competence of personnel List names of managers, supervisors and operatives	Evidence of competencies and where the records are kept	Evidence of involvement on previous demolition schemes, of similar complexity
P.P. O.Connor	TBC	On record	List scheme name, date and brief description

B4.12.2 Assembly of prefabricated components

Table B4.12.2: Assembly of prefabricated components

Activity	Ground information for lifting operation	Component information	Method information
Retaining wall	Temporary Working Platform to be designed	From precast manufacturer	As per activity plan, Temporary platform design

B4.13 Asbestos - *NP1.6: Control of asbestos at work*

BAM Nuttall only undertakes work with asbestos in limited circumstances, i.e., contaminated land, the removal of asbestos cement sheets or pipework encountered in the course of excavation and as an incidental part of the works. BAM Nuttall manages those who undertake work with asbestos on its premises or sites in accordance with BAM Nuttall Procedure NP1.6: *Control of asbestos at work*.

Details of asbestos anticipated on this project are provided in **Table B4.17**

Table B4.13: Asbestos

Asbestos anticipated on the project
Plateau CH180 – Notifiable asbestos
Plateau mound @CH220 – Non-notifiable Asbestos

B4.14 Highways

Highways works are carried out within traffic management. This traffic management will have been designed before works commence.

Operations involving work on highways on this project are listed in **Table 4.19**

Table B4.14: Work on highways

Operation involving work on highways	
Highway connection to Red Bank	*Detail responsibility for traffic management design and layout.* ***TBC once works scope is confirmed.***
HV duct installation	*Detail responsibility for traffic management design and layout.* ***TBC once works scope is confirmed.***

B4.15 Other significant hazards

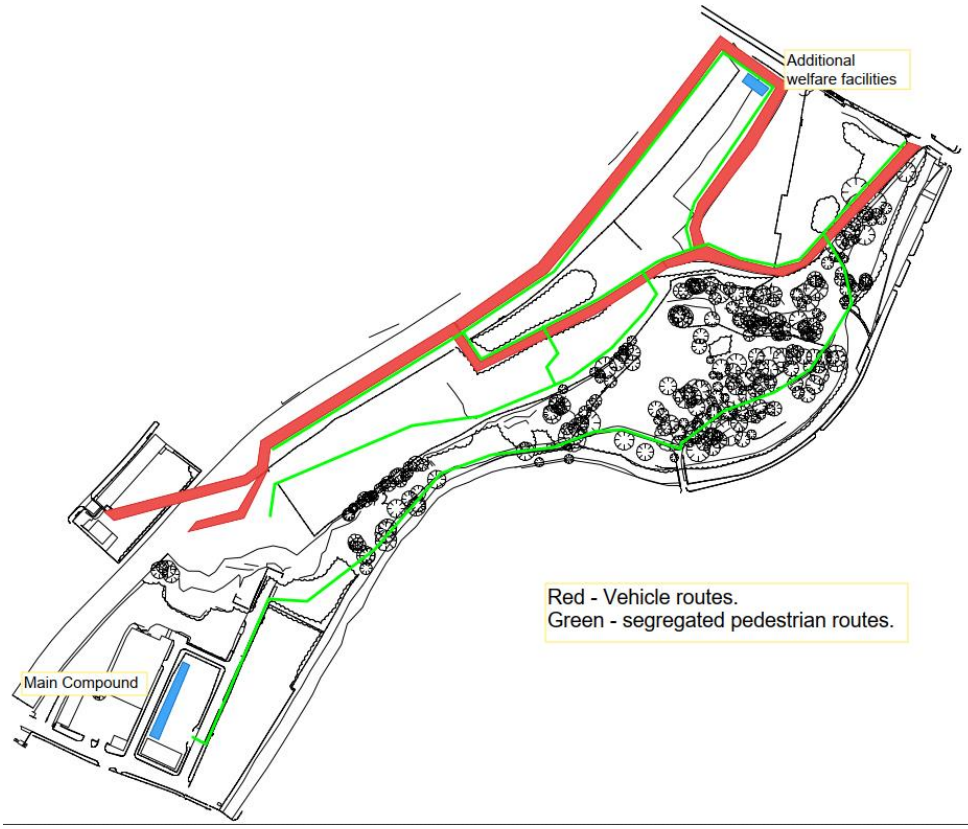
Other unusual significant safety hazards are listed in **Table 4.20**, together with outline control measures.

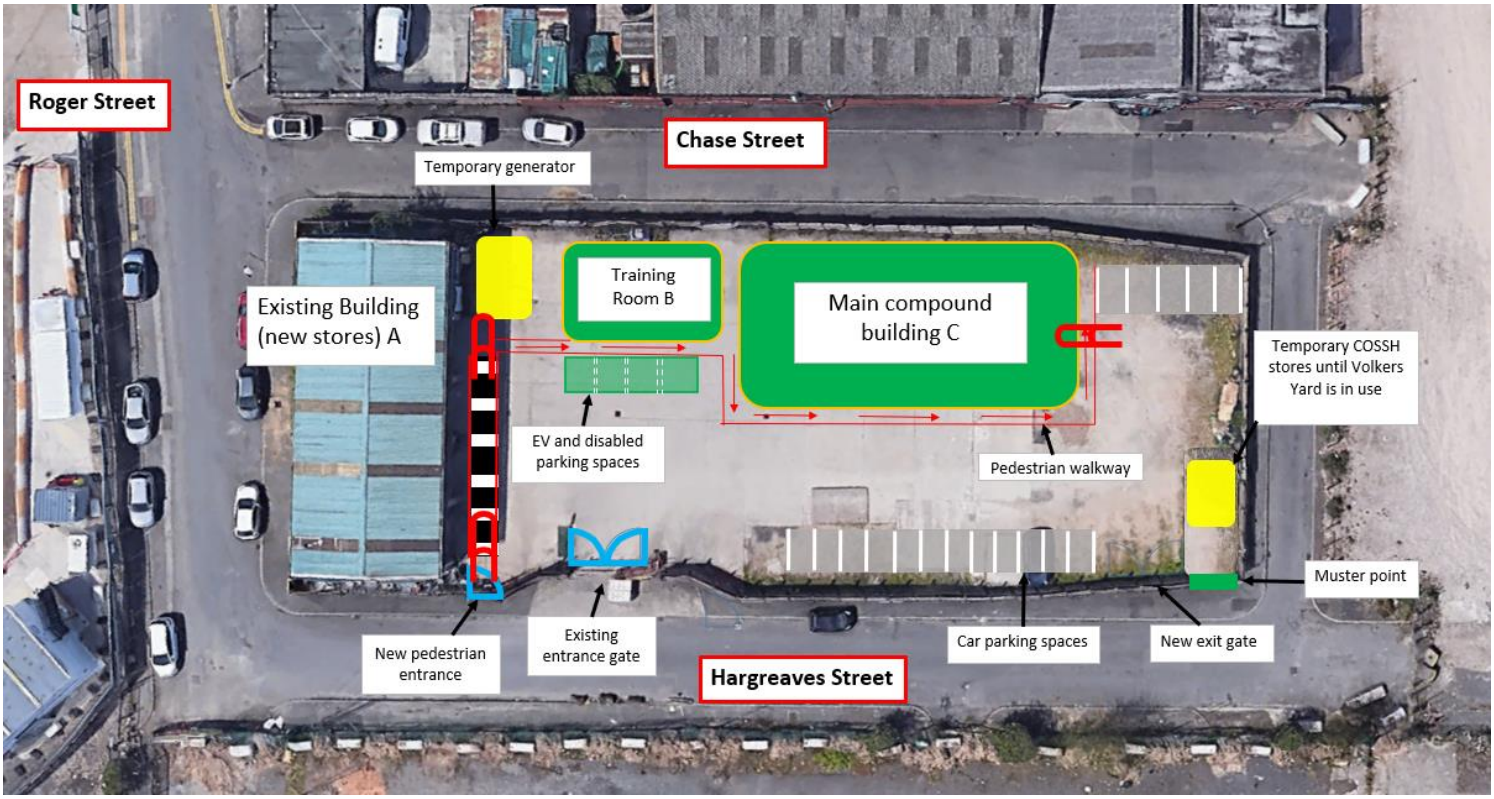
Table B4.15: Other significant safety hazards

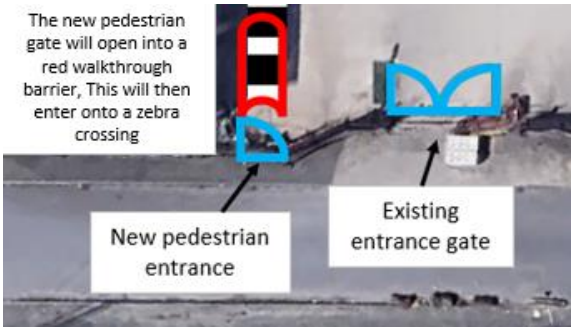
Hazard	Activities affected	Proposed control method
Maintenance of plant and equipment	Misc.	In accordance with Nuttall Procedure NP4
Needle stick injuries	All works in and around the site including site compound	Procedure to be drafted by BAM to deal with sharps. Designated team within the workforce briefed on the procedure and issued with PPE to remove sharps
Leptospirosis	All works within the site	Adequate welfare facilities provided. Adequate PPE provided.
Fly tipped waste	All works in and around the site including site compound	Procedure to be drafted by BAM to remove fly tipped rubbish from site with adequate PPE. This could potentially require a specialist contractor to carry out the works under BAM to remove the rubbish.
Asbestos – stockpiles	Avenue remediation	This will need to be removed by a specialist licenced contractor who will remove and dispose of the asbestos in line with the control of asbestos regulation 2012.

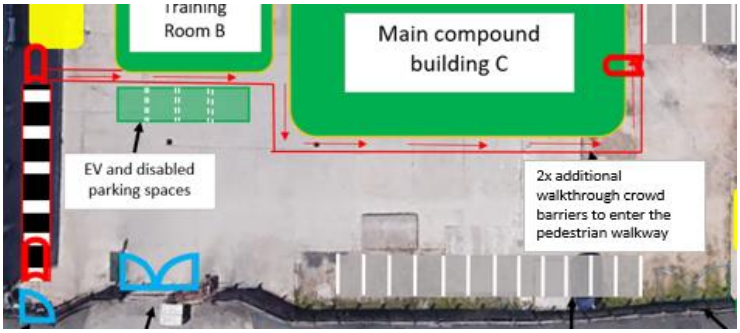
Schedule B1 Welfare Layout

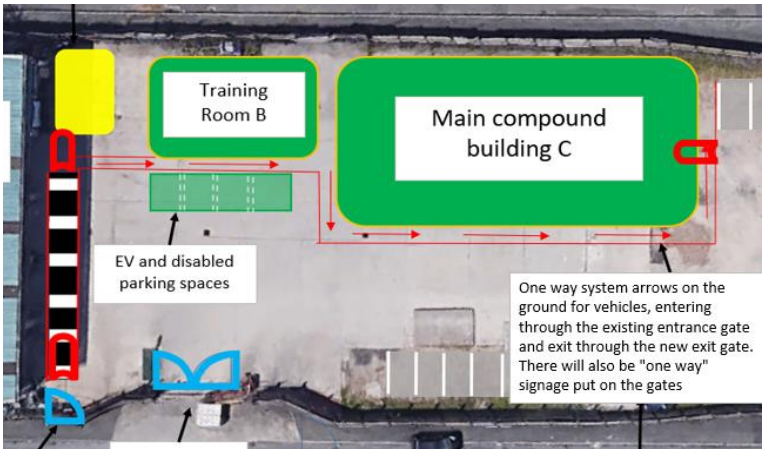



Additional welfare facilities
Red - Vehicle routes.
Green - segregated pedestrian routes.
Main Compound


Roger Street
Chase Street
Temporary generator
Existing Building (new stores) A
Training Room B
Main compound building C
Temporary COSSH stores until Volkers Yard is in use
EV and disabled parking spaces
Pedestrian walkway
Muster point
New pedestrian entrance
Existing entrance gate
Car parking spaces
New exit gate
Hargreaves Street







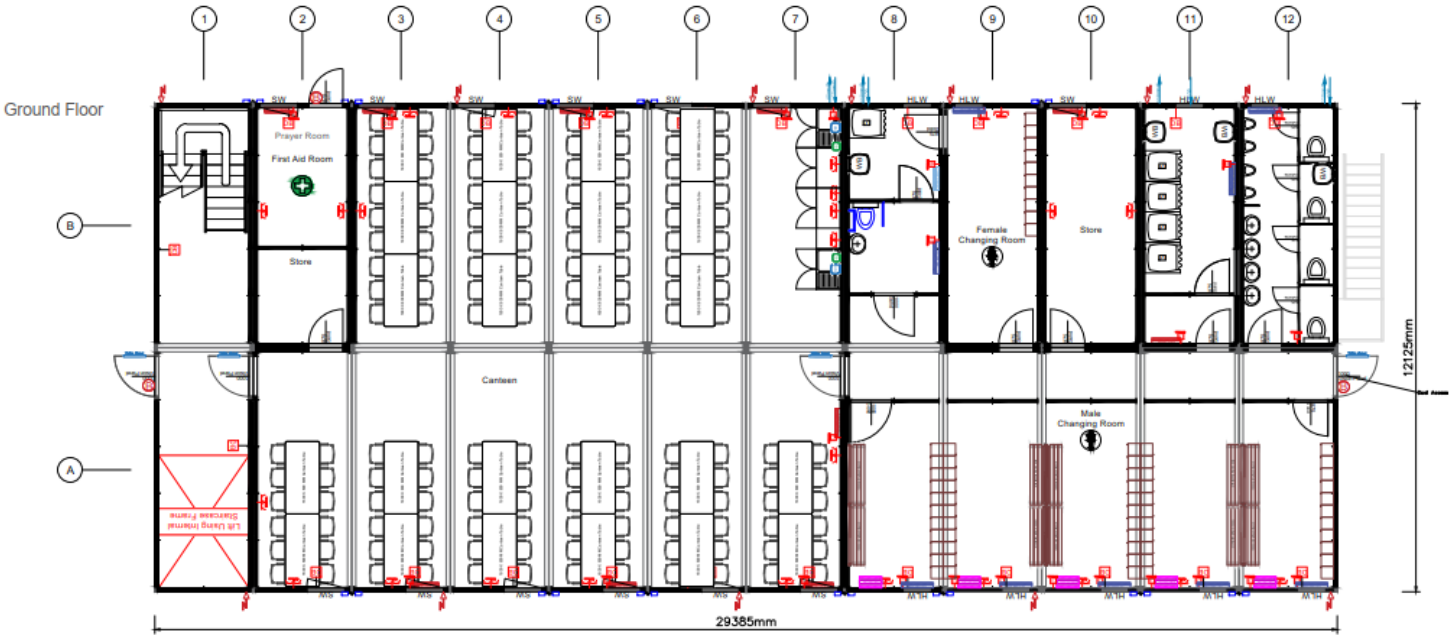
The main compound to be set up is in the off Hargreaves Street in Manchester (Please see above).

Existing Building (A) will be used as storage.

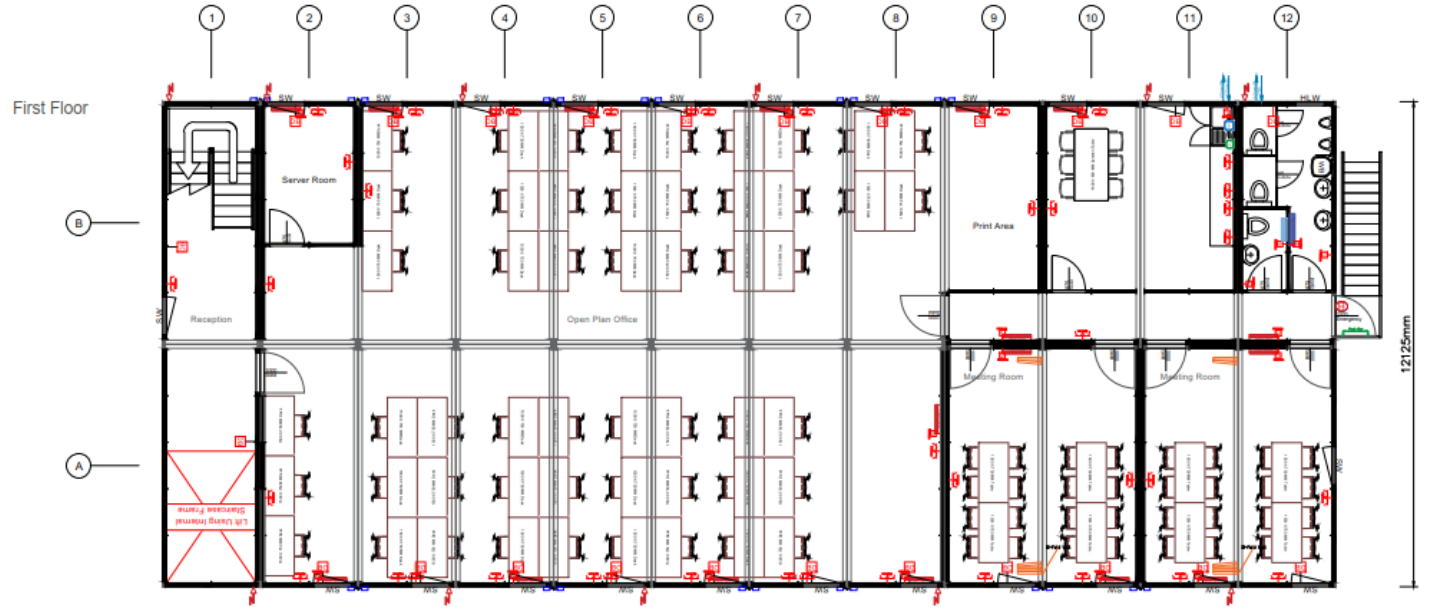
Training building B will be used for various training events for both the public and BAM Nuttall staff.

Main compound building (C) will be used for offices and welfare facilities for BAM Nuttall staff

All facilities will be connected to the existing electric, sewer and potable water supplies in the area.



Please see below for the layouts of each proposed building.



Schedule B2 Works Transport Layout



Schedule B3 Register of Service Drawings

Utility Type	Drawing Reference	Issue Date	Date Received
GPR Survey	PUM-11943-U-DR-001	08/12/2021	08/12/2021
Master Services Model	Arup issued – NO Drawing number	?	01/2020
Landmark utilities report for all service providers	Ref – LM /86247	01/2020	
United Utilities Linesearch	Ref -97079, pages 1-4	22/06/22	22/06/22
BT Linesearch	Ref - C22511	22/06/22	22/06/22
Cadent Linesearch	Ref – 24548845	09/02/2022	09/02/2022
Electricity Northwest Linesearch	Ref – 24548845	31/01/2022	31/01/2022

Schedule B4 Water safety management plan

In summary:

No works shall be carried out within 3m of the water's edge

If works do need to be carried out in the channel. A specific activity plan and risk assessment will be prepared and appropriately trained resourced used to carry out the activity.

-Wear Life jackets within 3m of the water course, including rescue personnel
-Safety ring with rope to hand
-Do not enter watercourse alone.
-Monitoring of Weather Forecast
-Monitor Gauge and level Forecast
-EA's weather/flood alert system

Water Rescue Procedure

Project Name	Manchester Victoria North	**Project Number**	BAA.2210
Site Contact	Liam Chambers	**Contact Number**	[redacted]
Component Reviewed	River Irk	**Completed By**	Liam Chambers
Reviewed By	Andrew Campbell	**Approved By**	L. Chambers

Procedure Following Fall into River/Recovery from Water

1) **Raise the alarm via air horns and shout "Person in Water"**
   - The first person/persons to witness the incident happening is to sound the alarm
   - Air Horns are to be located along the working edge of the river to be available if required
   - Rescue person to be located on the beach area with air horns & throw lines & life rings during the works

2) **Offer assistance with throw lines or life rings**
   - Anyone at the scene of the incident to help
   - Line Lines/Rings are to be clearly located along the working edge of the river to be available if required
   - Lifelines/Ring are to be thrown upstream of the casualty and allowed to drift towards the casualty

3) **If possible, person/persons in the river should attempt to grab onto throw lines/life rings or silt curtains**
   Under No circumstance should staff/personnel jump in the river to help
   - There are 1 number ladder access point to the river.

4) **The defibrillator, first aid kit and insulated rescue blankets will be collected from the site office and taken to the incident.**
   - Equipment to be stored on site close to any areas that might require it
   - Equipment to be checked weekly
   - Equipment should include a rescue stretcher for use by competent persons only

5) **During the works, there will be a competent person/person wearing life jackets standing watch on the downstream access platform or on the pavement following the works as they move up/down the river, they will keep watch during the works.**

6) **Assessment to be made as to whether the emergency services are to be called and contact senior site management**

Staff to review this are:
   - General Foreman — Stephen Donaldson

7) **If possible, the injured person/persons will be returned to land and treated by the First Aiders until the emergency services arrive (if necessary)**

First Aiders:
   - Liam Chambers — 07557 256660
   - Danny King

8) **If the injured person cannot be removed from the river, the person/persons shall be protected from river debris and kept warm until the emergency services arrive**

- A competent first aider will be able to confirm whether the IP should be moved or not. The IP should be moved if there is an immediate risk of drowning or further harm.
- The IP will be placed into the basket stretcher in the safety boat. At the base of the wall.
- The excavator will lift the stretcher up and over the wall. The load must be treated as a controlled lift, with appropriately competent slingers, and use of taglines to avoid unnecessary movement.

9) **If the emergency services are required, access must be cleared & marshals must be put in place.**

In the event of the person not being able to climb the ladder out of the channel the rescue stretcher will need to be used. This will automatically become an emergency service led operation.

- Staff at the scene of the incident will organize and plan the above
- The emergency services shall access the work area via **the nearest entrance. P&P or Hargreaves Street**

10) **Any persons not required in the area must be removed**

- Staff at the scene of the incident who are not needed to aid with the incident

11) **All other work on site stops**

12) **Further actions**

- Agent Liam Chambers – who will then inform relevant bodies including Environment Agency
- Drills must take place to ensure any issues can be resolved prior to any incident occurring

Section C Environmental Management Plan

C1.0 Introduction

This Environmental Management Plan (EMP) has been prepared to support the construction phase of Victoria North HIF Infrastructure Project. This is intended to be a high level EMP that outlines the general principles with additions made as information becomes available.

This plan should be read in conjunction with **Section A** of this Project Execution Plan.

C2.0 General Environment Requirements

C2.1 Environmental Aspects and Impacts Assessment

An environmental risk assessment has been carried out which identifies the environmental risk associated with core construction activities. Impacts from these activities were assessed in terms of risks to: air quality; archaeology and cultural heritage; contaminated land; ecology; landscape; material use and waste; noise and vibration; water; and public highways. The risks were assessed in terms of the potential likelihood and severity of consequence (extent / reversibility / sensitivity). Where medium and high risks were encountered, outline actions have been recommended and the residual post mitigation risk assessed. This risk assessment is included in **Schedule C1: Aspects and Impacts** and **Schedule C2: Environment Constraints Map**.

C2.2 Monitoring Arrangements

Prior to works commencing and thereafter quarterly the agent and the appointed environmental advisor review environmental risks and opportunities of the project documented in **Environmental Form EF12: Project Environment Risk review**. They agree level of support and frequency of inspection by the appointed environmental advisor.

BAM Nuttall Management System

EF12: Project Environmental Risk Review

	Project Name:	**Victoria North HIF main works**	**Environment Advisor:**	**Eddie Duncan**	
	Project No:	**BAA.2210**	**Date:**	**17-03-23**	
	Site Agent:	**Neil Peters, Liam Chambers**			

1.0	**Risk review**					
	Key receptors on the project?	**Threat Category**	**Comments**	**Actions**	**Owner**	**Date of actions?**
1.1	Water	High	Contaminated water present on site. Dewatering of site will be necessary for earthworks operations. If abstracting >20m3 of water per day an abstraction licence will be required. If discharging water to River Irk a discharge consent might be required, depending on	1) Methane from historic landfill - Contaminated water to be treated prior to being discharged to UU sewer - awaiting instruction from client. 2) Infiltrated groundwater - Chemical analysis to be undertaken on water present within ground across site to inform options re: discharge to sewer.	LC/ED	Pre-construction /construction phase
1.2	Nuisance	Medium	Demolition activities to be undertaken. Background noise monitoring has been undertaken to discharge planning condition. Residential properties circa 500m away and commercial properties circa 250m from the demolition works location. Daytime works only.	Noise and vibration monitoring to be undertaken where required.	LC	Pre-construction /construction phase
1.3	Contam land / waste management	High	Contaminated land present on site.	CLAIRE DoW CoP materials management plan to be produced for the earthworks by Arup - this is to be in line with the Remediation Strategy requirements.	LC/ED	Construction phase
1.4	Ecology	Medium	Invasive plant species present of site, namely JKW, Himalayan balsam and Giant Hogweed. Some treatmenet has already been undertaken in the form of spraying. Potential for bats in St Catherine's wood. Prelim ecology survey was undertaken by TEP	ISMP produced for the site. Earthworks to be undertaken in accordance with the requirements set out in the ISMP. Confirm if ecology surveys have been undertaken more recently than the Prelim Eco Survey done by TEP in May 2021.	LC	Pre-construction /construction phase
1.5	Heritage	Low	Watching brief was undertaken during removal of the railway turn-table. Lowry steps also on site - these are on the site boundary.	Archaeolgist watching brief to be undertaken where necessary.	LC	Pre-construction /construction phase

2.0	**Opportunities review**					
	Discussion item	**Required**	**Comments**	**Actions**	**By who?**	**Date of actions?**
2.1	Training	Yes	TBT's to be delivered as required. Spill drills. Briefing on ISMP and MMP requirements.	Carry out training as required.	LC	Construction phase
2.2	Regulatory involvement	Yes	Comms with EA, LA - MCC, UU.	Adhere to conditions set out within consents/licences/permissions.	LC	Construction phase
2.3	Audit proposals	Yes	TBC for main works - likely to be BAM Site and NP27.3 waste/NP27.1 water	ED to schedule.	ED	Construction phase
2.4	Case study opportunity	Yes	TBC for main works	TBC		
2.5	Key Materials (resources)	Yes	Site won material for earthworks, imported type 1, concrete.	N/A		
2.6	Energy requirements	Yes	Mains connection is planned for compound.	N/A		
2.7	Community investment	No				
2.8	Other support	No				

3.0	**Environmental Performance / Resources forcast**	**Resourse forecast**		**2020 Company KPI's**		**Owner**	**Date of actions?**
3.1		Diesel / Gas oil (litres)	100000	% Construction waste diverted from landfill: (80%)	80		
3.2		Electricity (Kwh)	500000	% Total waste diverted from landfill: (90%)	90		
3.3		Construction waste (tonnes)	10000	% Sustainably sourced timber: (100%)	100		
3.4		Excavation waste (tonnes)	32000	Water consumption / £1m turnover: (200m3)	200		
3.5		Demolition waste (tonnes)	2500	Tonnes of CO2 emissions/£1m turnover: (36.9)	36.9		

4.0	**Project appraisal**				
4.1	Appraisal rating	**70**	Frequency of inspection	**4 weeks**	
4.2	Any other risk from programme (key operations/dates)?		Agreed frequency of inspection if different from above and justification		
4.3	Next review date:	17/06/2023	Agreed next 2 dates of inspection (w/c)	April and May TBC	
4.4	Additional comments				

Signed as agreed:			
Site Agent:	**Neil Peters**	**Environment Advisor:**	**Eddie Duncan**

Site operations are regularly monitored during the site environmental engineers and agents weekly inspections to ensure overall environmental performance (legislative, client, and ISO 14001 and BAM Nuttall requirements) is maintained throughout the project duration. Compliance monitoring and frequency is detailed in **Schedule C3: Environmental Monitoring**

C2.3 Review Arrangements

This EMP will be reviewed when there is a substantial change to the scope or method of work, or every 3 months, whichever is soonest.

C2.4 Requirements and Consents

Consents, licences or permissions are required from a number of organisations including the Environment Agency, DEFRA, local water companies, local authority environmental health departments, local authority planning departments, Natural England and Natural Resource Wales etc.

These cover matters relating to work near water, disposal of waste, noise and vibration and ecology among others. Activities on this project assessed as requiring consent, licence or permission are listed in **Schedule C4: Consent licences and permissions.**

The BAM Nuttall Environmental Policy and key environmental information including poster campaigns will be displayed on notice boards at the project site offices.

C3.0 Specific Environmental Impact Areas

C3.1 Water (Resource) Management – *NP27.1: Water management NP27.2: Oil storage and refuelling*

A comprehensive assessment of the potential risks of water pollution as a result of work activities is made by the agent before each activity is carried out. Surface, ground and coastal waters are considered where appropriate. Activities likely to have an impact on controlled waters may be listed in **Table C3.1a**, together with appropriate control measures.

Table C3.1a: Water environmental controls

Location	Activity	Controls
Construction Plant	General	Use of bio-fuels, spill kits available at all work areas, spill containment drills carried out. Stationary plant and equipment containing fuel/oil to be kept on plant nappies. All plant to be in good condition and regularly serviced. All site team to be trained in spill drills which will be regularly trained. TBT on spill and pollution to be issued on site to all site team. Spill kits to be always kept with items of plant. Refuelling of plant to be undertaken away from water's edge. Diesel storage to be held in site compound in double bunded bowsers on hard standing area. Generators to be used in accordance with EG02
Earthworks	General	Establish bunds to control water
Concrete works	General	Keep concrete away from the edge. Wash out into identified area's of control
Surface water	General	Filter any water going down and Manholes (E.g. with hey/straw)
Plateau/RB04	Trade effluent discharge over	– Use of bio fuel in the pumping equipment. – Daily inspections of the pipe.

Location	Activity	Controls
	pumping into combined sewer.	– Visqueen lining under the pipe to stop any leaks contaminating the ground?

Control measures are summarised in **Schedule C1: Aspects and Impacts,** with environmental constraints detailed in **Schedule C2: Environment Constraints Map**.

Water usage is recorded and monitored by use of the BAM Site app. On this project, ways in which water use is being reduced are listed in **Table 3.1b**

Table C3.1b: Water reduction measures

Activity	Measures to be adopted to reduce use
Dust suppression, Vehicle wash down / wheel wash Toilets and taps, Damp down of demolition works	Good housekeeping Water usage to be monitored and recorded on BAM Site app Rainwater harvesting Push taps and aerators

C3.1.1 Herbicide and Pesticide Application

If required, herbicide and pesticide application will be covered by a task specific activity plan/ WPP. BAM Nuttall is not anticipating using any herbicides on site; however, if required, application will be by qualified experienced and registered sub-contractors only. Details of training records will be stored on-site or with the sub-contractor.

EA and MCC will be notified of all use of herbicides or pesticides within 10m of a watercourse.

C3.2 Fuel Oils and Chemicals - *NP27.2: Oil storage and refuelling*

Consideration is given to the location and method of storing fuel, oils and chemicals within suitable site areas for refuelling plant. Details of storage and refuelling arrangements are provided in **Schedule A7 Hazardous substances.**

Personnel responsible for refuelling plant & equipment will receive a tool box talk (Refuelling plant and equipment PP8) including site specific refuelling procedure including the emergency oil spill procedure**, Schedule A6** which will be displayed around site.

C3.2.1 COSHH (Chemical and biological hazards including dust and fumes)

The COSHH coordinator, ensures that all reasonable steps are taken to ensure that exposure of employees and others to hazardous substances is assessed and prevented or at least controlled to within statutory limits.

On this project, arrangements for storage of hazardous substances are detailed in Section B Construction phase plan **Section A Project Execution Plan.**

C3.3 Waste (Resource) Management - *NP27.3: Waste management*

Compliance with BAM Nuttall waste procedures and guidance ensures:

- compliance with relevant waste management legislation
- application of industry best practice

- identification of opportunities in waste minimisation/resource efficiency

The site waste management plan (SWMP) declaration, of **Schedule C5** identifies the waste streams generated with forecast quantities. The SWMP defines the selected waste management measures of prevention, reuse, recycling and recovery and, at the end of the project. This allows a comparison to be made between forecast and actual waste quantities.

Generation of waste material will be minimised at every stage of the project (design, procurement and construction), and reduction strategies will be implemented and detailed in the SWMP.

Quantities of waste, categorisation (inert, non-hazardous, and hazardous waste), are monitored by use of the BAM Site app. This is a live system which is reviewed and updated on a regular basis to ensure compliance and to track project waste performance. Copies of waste management contractors certificates, permits, licences or exemptions used or validated in consultation with the Environmental Advisor and retained on site in accordance with the site documentation control procedures.

C3.4 Contaminated Land

BAM Nuttall will investigate, assess remediation / disposal options of any potentially contaminated areas in accordance with contaminated land, environmental and health and safety legislation. Treatment / recovery / disposal options will be detailed in the relevant site waste management plan **Schedule C4** or Material management plan as required.

The controls for this should be informed by the Remediation Strategy. If we are remediating soils to be reused on site under CLAIRE code of practice, then we need to describe how we'll manage that risk.

Specific arrangement for contaminated land are as detailed in **Table C3.4** below*:*

Table C3.4: Contaminated Land arrangement

Signs of Contamination	Test Results *Actual Levels*	Contamination Identified	Exposure Level Environment Maximum Level	Action Taken
Asbestos	*Visible on the ground*	*Yes*		Isolate stockpiles and hire specialist subcontractors to dispose.
Oil	Oil in the ground- discovered during BAM Ritchies G.I.	Yes		Excavation treatment of oil. Bring a contamination unit on site and dispose of earth
Chemical Contaminants	Discovered during GI works	Yes	As per re-use criteria in the CWRA	Isolate hotspot areas, identify areas for immediate offsite disposal, verify materials for reuse on site
Contaminated Groundwater	During excavation of known	Yes	As per re-use criteria in the CWRA	Isolate hotspot areas, identify areas for immediate

	contamination hotspots			offsite disposal, verify groundwater for reuse on site/removal from site

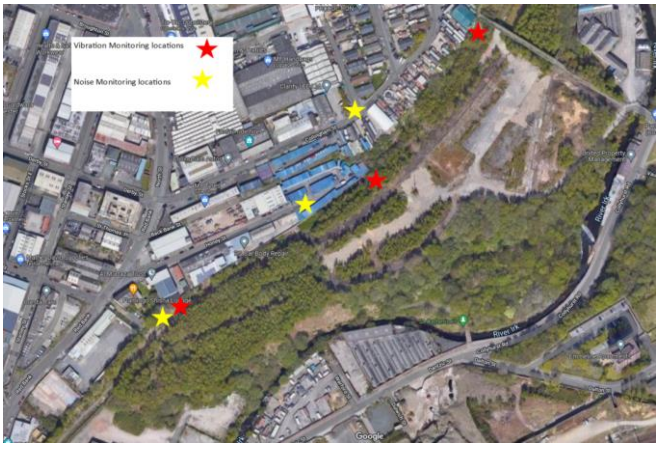
C3.5 Nuisance - NP27.4 Control of site nuisance

Construction activity has the potential to cause nuisance within the site, to site personnel, to local residents, site neighbour's and the general public in the form of noise, dust, mud, vibration smoke light and odour.

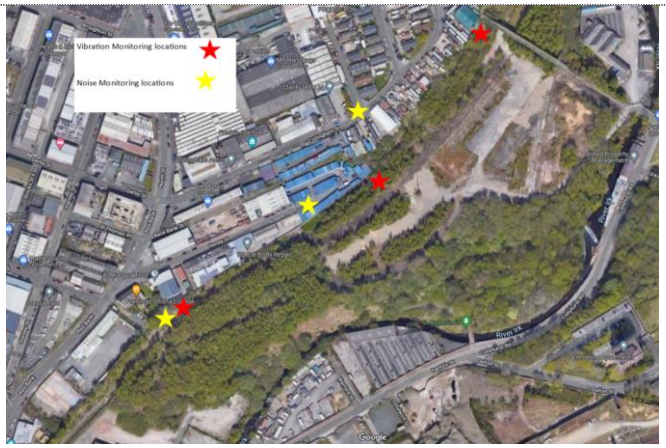
Activities likely to cause nuisance are identified by the agent, who selects appropriate control measures to avoid the nuisance or mitigate the effects if avoidance is impracticable.

Activities likely to cause nuisance are listed in **Table C3.5**, together with appropriate control measures.

Table C3.5: Nuisance

Activity	Potential nuisance	Control measures
Construction Works	Interference	All work areas to be securely fenced to prevent public access to areas All works to be carried out within site working hours Mon-Fri 07:30-18:00
Welfare accommodation	Lighting	Lighting within welfare to have PIR to turn off lights when area not in use. All lighting required for compound to be directed away from any homes or buildings in the areas.
Welfare accommodation	Odour	Regular emptying of waste bins
Welfare / site area	Litter	Provision of suitable waste containers, regular monitoring of issue, carry out litter sweeps of site perimeter etc. at close of each workday
General site works and plant operation	Noise	Mitigation measure as highlighted in BS5228:2014 to be utilised where possible/practical as exampled below. • New efficient plant/equipment to be used on site with efficient exhaust sound reduction equipment fitted. • Manufactures enclosure panels to be kept closed during operation Static items of plant to be housed within acoustic enclosure where practical
Earthworks	Noise	

Activity	Potential nuisance	Control measures
		Prior to works being undertaken base line readings will be taken using a Type 1 sound level meter to record the existing levels within the area at the locations shown in the above drawing. The earthworks element of the project is planned to take approximately 6 months to undertake and will be made up of the excavation, filling, compaction and movement of materials across the site areas. As can be seen in the above for this element of works there will be a number of local receptors which may be impacted by the works. The monitoring positions highlighted have be located to allow monitoring and impact of these businesses during the operations. During the earthworks operations regular readings will be undertaken and recorded. Peak trigger levels for earthworks to cease will be 85db at 10m from the point of work. Should operations (breach these levels work will cease immediately. Acoustic barriers (Heras's fence mounted as shown below) will be erected along the boundary between the work area and the identified receptors. The barriers have a max noise reduction of up to 37db dependant on operation. Works will then recommence to allow noise level readings to be taken to confirm suitable mitigation has been put in place. Once readings confirm the mitigation is sufficient works will recommence with more regular noise readings taking place to confirm the trigger levels are not being breached.  Example of fence mounted acoustic barriers

Activity	Potential nuisance	Control measures
Earthworks	Vibration	 Vibration monitoring will be undertaken during the earthworks operations. A Vibrock V900 Seismograph will be positioned (as shown on the above sketch) will be positioned at the appropriate location at the start of each day. The monitor once positioned provides continuous monitoring during the day. At the end of each day the recorded data will be downloaded and stored for inspection as required. A base line reading of 0.525mm/s has been recorded prior to works commencing and takes account of passing traffic etc. Trigger/threshold levels of 3.0mms at the point of work, but should not exceed 1.0mm/s PPV at the boundary with receptors.
Earth works	Dust	See - Air Quality and Dust Management Plan SRL VNIF-BNL-ZZ-YYY-RP-ZZ-0001 The earthworks are currently planned to be undertaken during the winter season which should provide some natural suppression whilst the works are underway. If required the areas of haul road used to transport material around the site will be dampened down utilising a bowser and spreader bar. Additionally, areas will be sprayed with a jet wash to dampen down where required and where the bowser and spreader bar cannot be utilised. No dry sweeping will be undertaken across the site, all road sweeping will be water assisted and be carried out to the required distance from site to remove any deposited material tracked out from Site form the roads. All vehicles entering or leaving the site will be covered to prevent any escape of materials during transport. Haul road and access roads will be inspected daily, and a record of the inspection kept. Vehicles will be inspected prior to leaving site and any wash down required will be undertaken by operative

Activity	Potential nuisance	Control measures
		using a jet wash on the hardstanding before entering the public road Hard surface maintained between site and public road for inspection and clean down. Compliance and monitoring for dust will be carried out by a specialist subcontractor.
All Works (excavation, demolition, construction)	Contaminated Water	○ Any groundwater that may be discovered whilst excavating/stockpiling material of contamination will be tested, and either pumped across dry ground away from any receptors. Or if the sampling shows the water as containing contaminants or pollution as defined in the CWRA it will be pumped to a large holding tank ready for disposal via an authorised waste disposal facility. ○ Surface water runoff will be controlled using a series of temporary grips, and trenches that will prevent the water from picking up suspended solids, contaminants and remain 'clean' . The mitigation of this surface water may vary based on location and the water should be prevented from reaching the River Irk where possible. ○ Prior to discharge to sewer it may be necessary to pump the water to a settling Lagoon, or series of silt trap, where any suspended solids will drop out prior to discharging to sewer. Alternatively during the drier summer months, the water may be used to supress dust on the site and be used to condition dry materials and allow for better consolidation and compaction. ○ Any excess surface water will be discharged from site via a consented point within the site boundary to the sewer network. This temporary discharge consent has been granted on the proviso that it has been sampled and tested to the United Utilities thresholds as detailed in the temporary discharge consent obtained for the VNIF project. ○ Separate authorisation will follow from the Environment Agency if the water will be discharged via the permanent outfall to the River Irk as the permanent drainage is installed and commissioned.
Welfare accommodation	Vermin	Employ specialist to install control measures. Enclosed bins and skips in welfare.
Earthworks	Mud on roads	Employ services of road sweep, regular monitoring of situation and utilising additional resources if required.
Construction traffic	Vehicle emissions	Minimise wagon movements, avoid idling of engines, and provide vehicle holding areas where wagons can park off the public road network. Regular maintenance regimes / servicing of site vehicles. Where possible the use of ECO plant will be utilised. If practical fully electric plant items will be utilised.

Activity	Potential nuisance	Control measures
Construction traffic	Interface with public	Production of a Traffic management Plan to detail measures to minimise disruption, Off road parking to be made available for all vehicles, information packs to be provided to all suppliers and delivery drivers to ensure compliance with the projects Travel Plan. ***TBC once works scope is confirmed.***
Construction waste	Odour/vermin	Use of enclosed waste receptacles

Control measures are summarised in **Schedule C1: Aspects and Impacts with potential** receptors detailed in the **Schedule C2: Environment Constraints Map**.

C3.6 Ecology and biodiversity - *NP27.5: Management of ecology and biodiversity EG09: Protected species*

Where the project work disturbs, or has the potential to disturb, species of plants or wildlife, certain conditions may apply concerning timing of activities, exclusion areas and protective measures. The agent is responsible for identifying and putting in place appropriate control measures.

Activities restricted for ecological reasons and enhancements adopted on the project may be listed in **Table C3.6** below:

Table C3.6: Constraints and enhancements

Ecological constraints	
Location/ activity	**Constraints and control**
Site Wide	Protected species - no species identified in Works Information, survey to be carried out specialist prior to commencement of construction activities to identify any new issues.
	Invasive species (Himalayan balsam, Japanese knotweed, and giant hogweed) present, pre-works treatment regime carried out Relevant TBT's to be issued to all site team to allow them to identify invasive species and understand the risks and the measures required in regard to Bio security. Invasive species management plan has been produced to guide on the control of the works being undertaken.
	Prevention of spread of invasive species by use of Bio-security measures, including a) wheel washing of machinery/plant, b) washing of boots/shoes from site staff, c) use of caterpillar tracks rather than tyres to reduce material transfer off site, and d) ensure any site runoff from wash-down area is on hardstanding and directed to a public drain at least 10m from a water course.
Site Wide	Potential Bat Roost in St Catherine's wood. Restrictions when clearing trees, watching brief required.
River Works	Presence of Signal Crayfish within water course, check clean dry policy to be implemented. Works in river to be under environmental permit.
Ecological enhancements	
Location	**Enhancements**
Site wide	N/A

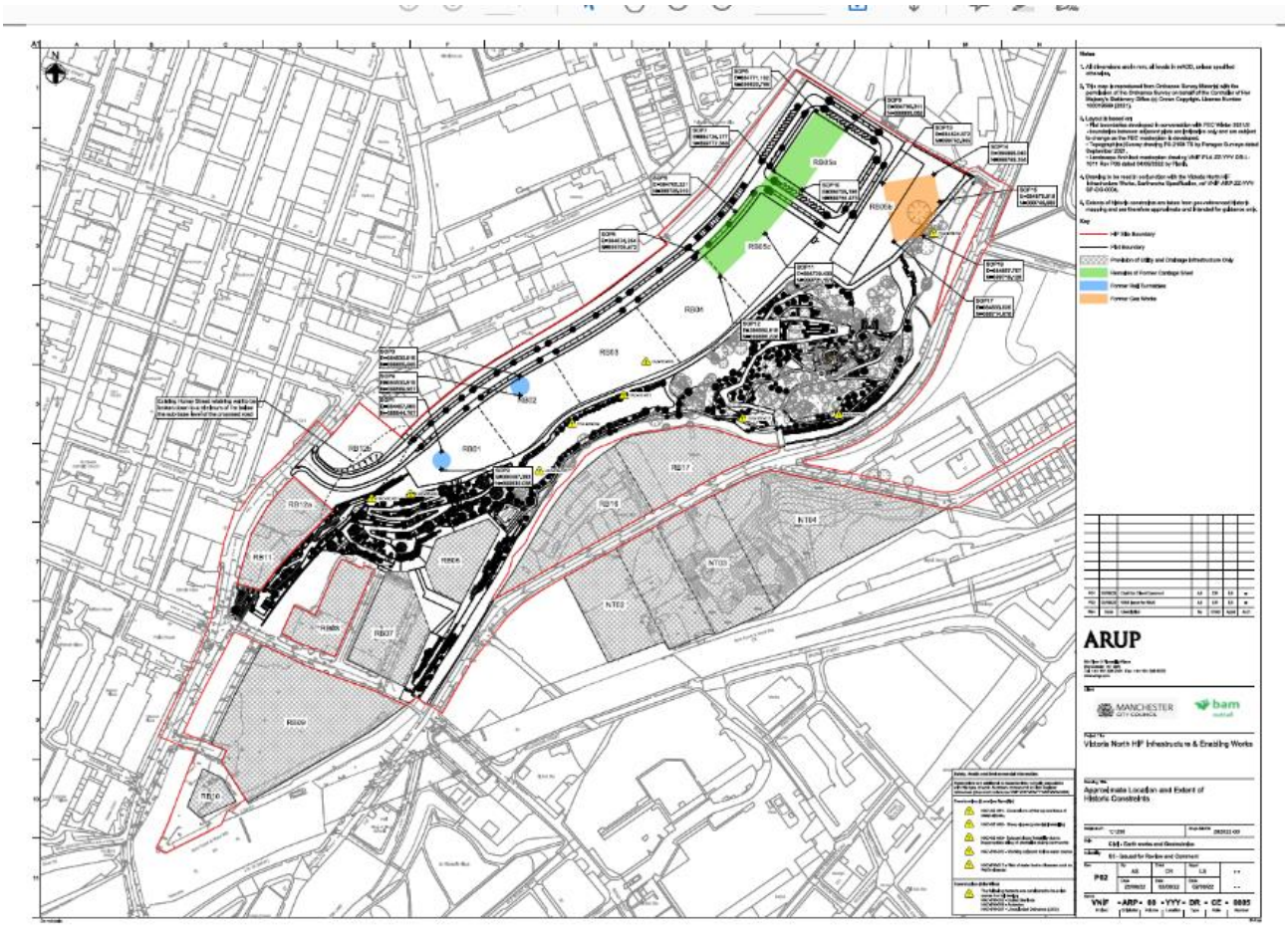
Control measures are summaries in in **Schedule C1: Aspects and Impacts** with ecological sensitive areas identified in **Schedule C2: Environment constraints map**.

C3.7 Built Heritage and Archaeology - NP27.6 Management of built heritage and archaeology

Arrangements are made for the identification and protection of areas of archaeological interest or listed structures and buildings. Any such areas identified during the undertaking of the project works will be immediately brought to the attention of the client and instructions sought. List of archaeological and listed structures may be detailed in **Table C3.7** below:

Table C3.7: Archaeology and listed structures

Areas of site subject to archaeological interest or with listed structures	Nature of interest, method of protection or other arrangements
Lowry steps	Area to be fenced off during all construction works and treated as an exclusion zone
Turntable	Area to be demolished under watching brief
Former Carriage Shed & Gas Works	Area to be demolished under watching brief. Hard obstructions and soil contamination to be removed.



Activities restricted for as built environment are summarised in **Schedule C1: Aspects and Impacts** with ecological sensitive areas identified in **Schedule C2: Environment constraints map**.

C3.8 Energy Management

BAM Nuttall seeks to reduce the emissions of greenhouse gases from the construction process on its projects and consequently looks for ways in which to reduce energy use. Sources of greenhouse gases contributing to the BAM Nuttall 'carbon footprint' include:

- Electricity and gas supply for heating, lighting and services to site accommodation
- Gas oil typically used in site plant and site generators
- Petrol and diesel used for commuting and business travel including transport of plant and materials
- Water supply and waste water treatment

Every effort is made to obtain grid supplied electricity to reduce the use of generators. Where this is not possible, a generator is used with consideration given to a setup which achieves the most optimum efficiency.

On this project, ways in which energy use is being reduced or alternative energy sources utilised are listed in **Table C3.8** below:

Table C3.8: Energy reduction measures

Carbon emission sources	Measures to be adopted to reduce use
Main site compound - Electricity	Low energy lighting, PIR sensors for lighting, and main connection to main compound. Eco hybrid welfare units
Gas oil	Use of HVO fuels
Petrol and diesel for commuting	Car sharing / use of public transport to be encouraged. Use of electric vehicles to be encourage. On site charging points to be installed.
Petrol and diesel for business travel	Use of digital platforms to minimise travel for meetings
Plant usage	Hybrid/Eco plant to be utilised. Where possible the use of electric plant to be prioritised.
Main site compound - Water supply	Rainwater harvesting to be adopted at welfare facilities to be used for dust suppression activities
Main site compound - Waste water treatment	Connect welfare toilets etc. to mains sewage.

Where non vendor accord supplier are used for the supply of fuel and energy, the agent ensures that consumption data is collated and entered on BAM Site app for monitoring purposes.

C3.9 Resource Sustainability

BAM Nuttall is aware of the global impact of the use of limited natural resources and of the need to reduce waste. Consequently, every attempt is made to reduce the use of primary aggregates and unsustainable products and materials wherever possible. Where practicable, commercially acceptable and in accordance with specification and regulatory requirements, use is made of waste or recycled material, or products containing recycled material.

Consideration is also given to the environmental impact caused during the lifecycle of the product within the scope of which BAM Nuttall can control or influence.

In accordance with the BAM Nuttall sustainability and environmental policies, every effort is made to use timber obtained from certified legal and sustainable sources.

Opportunities for the use of sustainable products and material have been identified as listed in **Table C3.9** below and will be pursued during the undertaking of the project works.

Table C3.9: Sustainable products and material

Opportunities for the use of sustainable products and material	
Product	**Sustainable specification**
Timber	100% sustainable timber FSC or PEFC certified
Aggregate	50% recycle content
Metal	90% recycle content
Concrete	Design specification – low cement content
Products certified under BES 6001.	
Training	TBT on sustainable timber deliveries to be presented by Env Dept
Alternative chemicals and products	
Product	**Substitute**
N/A	

C3.9.1 Life cycle considerations

Within the scope of the design and construction of the project the following life cycle considerations have been taken into account as summarised in **Table C.3.9.1** below:

Table C3.9.1: Life cycle considerations

	Life cycle stage	**Considerations**	**Outcome**
Design	Design	Design optimised to reduce construction time and duration of works where possible	
		Off-site prefabrication methods (e.g., pre cast concrete) to be employed where possible to minimise environmental footprint on site	
	Raw materials	*TBC*	
Construction			
	Production	*TBC*	
	Delivery of materials	Locally sourced where practical, bulk transport where possible, combined types of material from same supplier thus minimising number of trips / part loads.	
Use	Life of the structure	Minimum maintenance design adopted where possible	

C3.10 Landscape/ Restoration

On completion of the works the agent ensures that the works areas are restored as required by the planning authority and client.

The individual character, quality and value of the working area will be restored taking into consideration the wider landscape, biodiversity and historical context of the area as listed in **Table C3.10** below, or if required by planning consent or in the restoration plan provided by the customer.

Table C3.10: Restoration requirements

Planning/ client requirements	Arrangements for restoration
Honey St Wall repointing	To be repointed, Asset owner to be allowed to inspect structure post demolition works

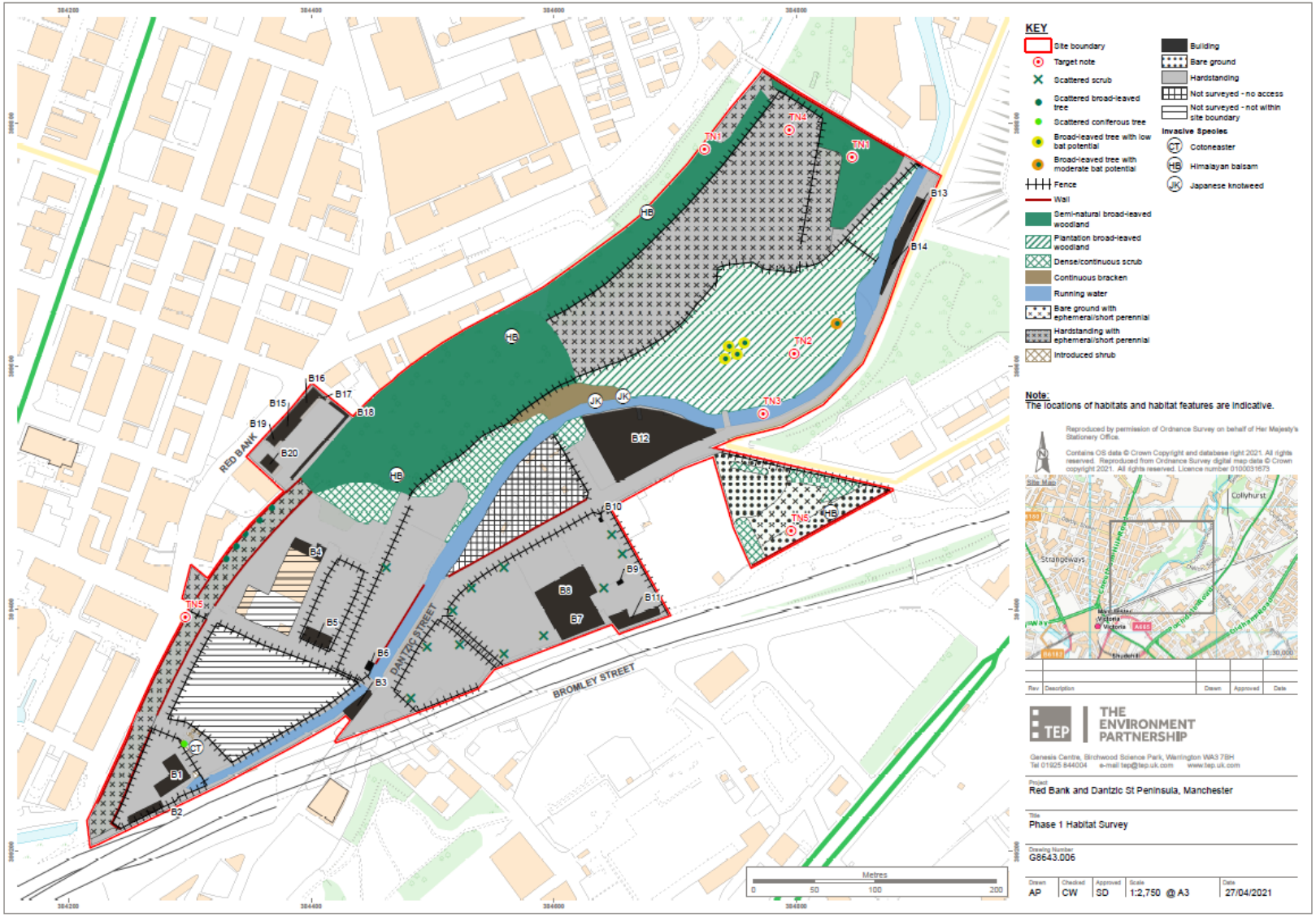
Schedule C1 **Environmental aspects and impacts assessment for construction works**

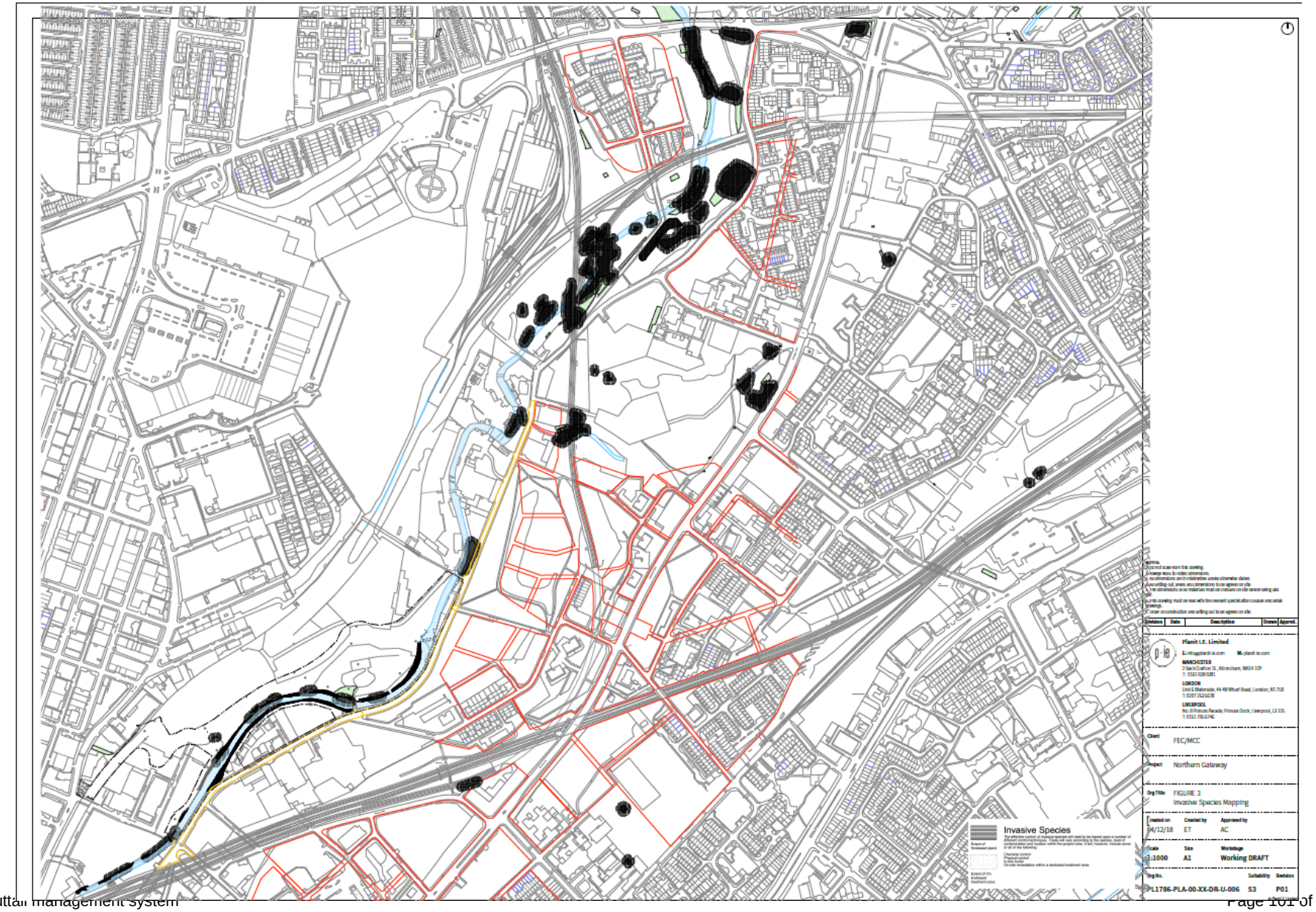
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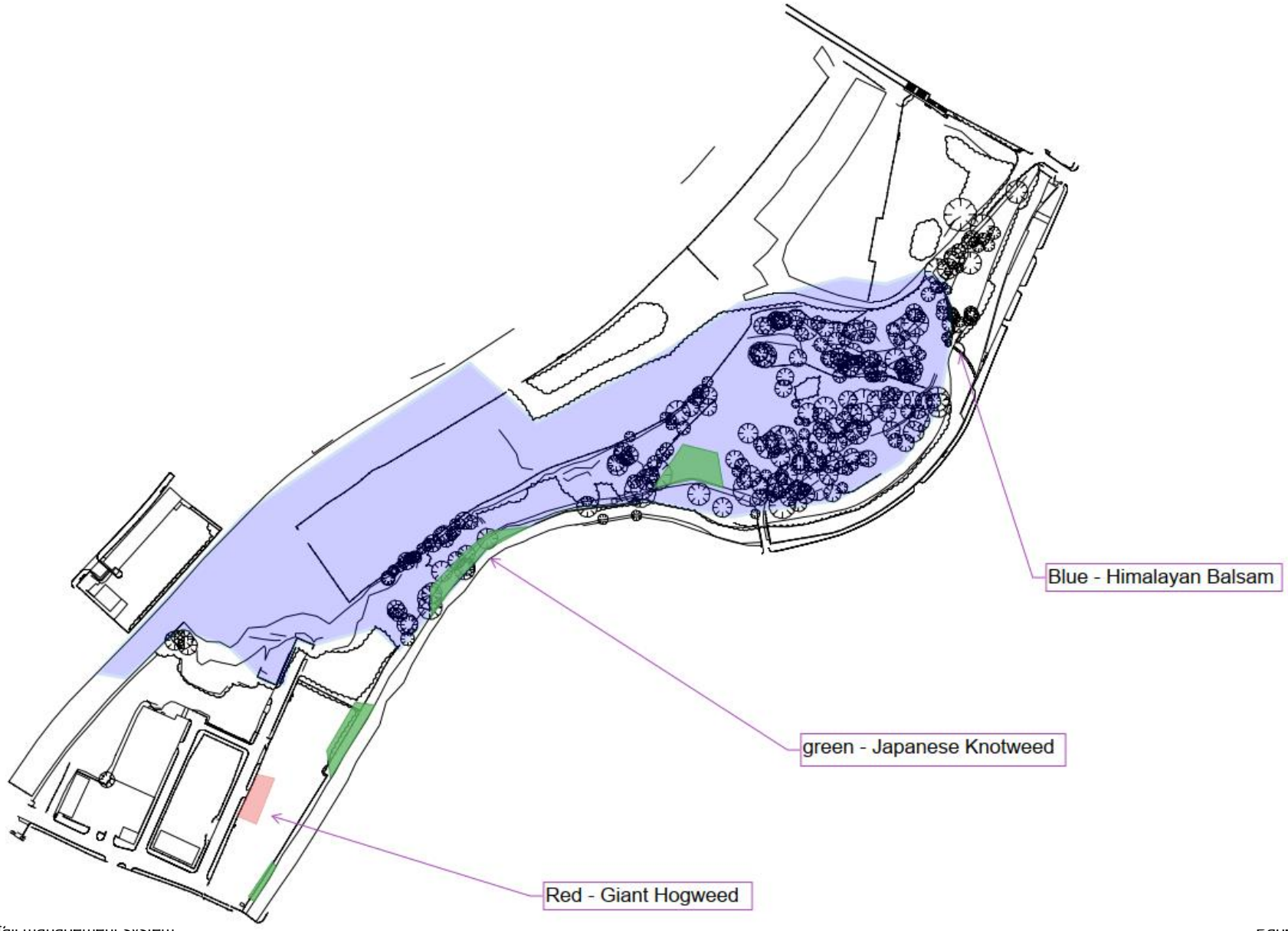
Project reference: Victoria North HIF BAA.2210
Environmental Social Apects and Impacts Assessment

Activity	Aspect (Receptor)	Environment & Social (Risks and opportunities)		Normal or Abnormal Operations?		What is the significance of each impact pre mitigation?			Environmental & Social Actions (Press Alt and Enter for a new line in cell)	What is the significance of residual impacts post mitigation?			BAM Nuttall procedure	Other procedure
			Positive or negative impact	Impact Under Normal Operation	Impact Due to Accident and / or Emergency and/ or abnormal conditions	What is the likelihood of the impact occurring (A)	What is the severity of consequence if the impact occurs (B)	Significance Rating (AxB)		What is the likelihood of the impact occurring (A)	What is the severity of consequence if the impact occurs (B)	Significance Rating (AxB)		
Site Clearance	Ecology & biodiversity	Risk of disturbing protected species that may be present on site.	Negative	✓		Medium	Medium	Medium	Precondition surveys have been carried out by the client and ARUP to search for evidence of any protected species in the locality of the works. We are currently awaiting the outcome of those surveys and an update EAP which will include any mitigation measures if there are any.	Low	Low	Low	NP27.5	
Site Clearance	Ecology & biodiversity	Risk of disturbing nesting birds during tree clearance.	Negative	✓		High	Medium	High	Best endeavours are to be made to carry out all tree clearance works outside of nesting season. If this is not possible a watching brief is to occur while removing trees. If an active birds nest is identified works will be stopped and advice sought from an ecologist.	Low	Low	Low	NP27.5	
Site Clearance and subsequent works	Ecology & biodiversity	Potential for invasive species to be present on site or close to it.	Negative	✓		Medium	Medium	Medium	Invasive species have been identified on site. Spraying to take place twice yearly. Fencing and signage to be installed to prevent the spread of the invasive species.	Low	Low	Low	NP27.5	
Demolition	Contaminated land	Asbestos present in fuses. Potential to cause harm to the workforce and have a negative impact on the local environment.	Negative	✓		High	High	High	A suitably certified and qualified contractor will be appointed to carry out the demolition and remove and dispose of the asbestos properly under licence prior to any demolition work taking place.	Low	Medium	Medium	NP27.3	
All works	Waste	Used sharps disposed of all over the site	Negative	✓		Medium	High	High	Tool box talk to be briefed to full site team and all sub-contractors prior to works commencing on site. Initial site sweep will take place prior to works commencing. Only competent persons to dispose of sharps.	Low	Medium	Medium	NP27.3	
Excavation	Contaminated land	Fly tipped rubbish has been deposited all over the site	Negative	✓		High	High	High	No further information is known about the contents of the fly tipped rubbish. An instruction will come from the client to carry out further investigation as to the contents of the fly tipped rubbish. Any contamination will be sampled to determine what is and mitigation measures udpated accordingly.	Medium	Low	Medium	NP27.3	
All works	Water environment	Potential to contaminate local water courses during the works.	Negative	✓		Medium	Medium	Medium	All refuelling is to be carried out by a nominated and trained refueller more than 10m from a watercourse. All plant is to have bio oil and carry a spill kit at all times in case of a spillage. Any areas of potential surface water run off are to have a silt net erected to prevent solids from entering the water courses. Designated concrete wash out is to be used at all times and positioned more than 10m from a water course or surface water drain. Follow the Environment Agency pollution prevention guidance at all times. Relevant permits/consents to be obtained and adhere to where necessary, i.e. abstraction/discharge activities. FRAP conditions to be adhered to. Agent and Foreman to sign up to EA flood warning system and flood response procedure to be in place.	Low	Low	Low	NP27.1	
All works	Nuisance	Disturbance to local residents and businesses.	Negative	✓		Medium	Medium	Medium	Client to inform the local businesses and residents in advance of the works. On going public consultation to take place and advance warning of noisey works to take place. Where required activity plans will address specific measures in certain locations. NCC environmental health to be consulted and kept informed as the works progress.	Low	Low	Low	NP27.4	
All works	Built heritage and archaeology	Damage to Lowrey Steps	Negative	✓		Low	Medium	Medium	Damage to the steps is highly unlikely as we are 25m or more away from it with our works. No vibrating compaction equipment will be used within 60m of it. Watching briefs to be in place where required.	Low	Low	Low	NP27.6	
All works	Landscape and visual amenity	Damge to existing trees	Negative	✓		Medium	Medium	Medium	An arboricultural assessment has been carried out pre-construction and the outcomes along with any mitigation measures will be sent out with the updated EAP.	Low	Low	Low	NP27.5	
Waste management	Nuisance, Waste	Increase in litter, vermin and odour	Negative	✓		Medium	Medium	Medium	- Promote prevent, reduce, reuse, recycle - All waste to be kept in secure waste receptacles - Waste bins/skips to be covered at all times to prevent contents becoming airborne and reduce risk of rodent/ bird activity - Daily litter inspections to be carried out - Comply with waste duty of care, obtain and check with environment regulator treatment facilities have appropriate licences prior to waste removal off site. - Ensure suppliers take away packaging associated with deliveries, where possible.	Low	Low	Low	NP27.3	

Schedule C2 **Environmental Constraints Map**




Invasive Species
Planit I.E. Limited
MANCHESTER
LONDON
LIVERPOOL
Client
FEC/MCC
Project
Northern Gateway
Drg Title
FIGURE 3
Invasive Species Mapping
Created by
ET
Approved by
AC
Scale
1:1000
Size
A1
Workstage
Working DRAFT
Drg No.
PL1786-PLA-00-XX-DR-U-006
Suitability
S3
Revision
P01


Blue - Himalayan Balsam
green - Japanese Knotweed
Red - Giant Hogweed

Schedule C3 **Environmental monitoring**

Environmental aspect	**Method of monitoring**	**Frequency**	**Responsibility (name/job title) or subcontractor**	**Records**
Discharge to watercourse/Sewer	Visual inspection, sampling and analysis or otherwise as defined in consent from UU/Environment Agency Permit	Weekly	Site engineer or laboratory	Test results/ EF01/ EF03 Complaints log
Noise	Noise assessments Noise monitoring to be undertaken in accordance with BAM Environmental Guidance note EG06	Base line recordings to be undertaken and recorded ahead of operations commencing Readings to be taken at intervals throughout the demolition and haul road construction operations, with a minimum of 5 per week being undertaken whilst operations take place the readings will be taken to specifically target the elements of the demolition works and compaction operations on haul road	Site engineer	Noise assessments/ (EF02) Monitoring data/ Complaints log
Dust	Visual inspection of site by site supervisor (foreman) and Demolition subcontractor's supervisor	Daily, and before commencement of operations.	BAM Site Supervisor and Demolition contractors Supervisor	As per Air quality Monitoring Plan EC01/ Site diary/ monitoring records/ Complaints log

Environmental aspect	Method of monitoring	Frequency	Responsibility (name/job title) or subcontractor	Records
Vibration	Vibration monitoring, Use of Vibrock V900 seismic monitoring unit.	Daily(equipment monitors continually during the day) as demolition and haul road construction works are undertaken	Site engineer	EC01/ Site diary/monitoring records/ Complaints log
Ecology				
Condition of plant and equipment	Inspection/walkover survey/watching brief (as defined in contract conditions)	As required	Consultant	Survey/inspection reports/EF04 Eco-permit
Fuel/chemical storage area	Plant maintenance and inspection Visual inspections of plant	Daily	Plant dept. fitter Plant operator/foremen	Plant inspection sheet/ Foreman's diary
Waste disposal	Visual inspection/checklist	Daily	Foremen/site environmental engineer	Completed checklists EC01/ Site diary
Emergency spill kits	Visual inspections on site Inspection/maintenance of records	Weekly	Foreman/Agent	Checklist/ Waste transfer records
Emergency arrangements – e.g. practice drills	Visual inspection	Weekly	Foremen/site environmental engineer	Recorded inspections (EC01)
Other	Practice drill	Monthly	Foremen/site environmental engineer	Record of drill/site training. (SF513)

Schedule C4 **Consents licences and permissions**

The following consents, licences and permissions are required.
Please include references and dates for all consents, licences and permissions, i.e. planning application details, sewer discharge consent details, reference to CLAIRE code of practice for onsite reuse of contaminated soils, crusher Part B permit and local authority notification.

	Site process	Documentation consent/permits /licences	Controlling regulations	Issuing authority	Date Submitted to Issuing authority	Approval Period	Date Consent Approved	Consent / permit / licence ref no.	Surrender Date
General	Undertaking construction works	Planning permission	Town and Country Planning Act	Local authority	**TBC**	**Approx. 16weeks**	**TBC**	**133143/VO/2022**	
	Undertaking building works	Building control approval	The Building Act	Local authority					
Water	~~Discharging water to a river, stream, ditch~~ ~~Installation/operation of septic tanks.~~	Discharge consent to controlled water	Water Resources Act Groundwater Regulations Environmental Permitting (England & Wales Regulations)	Environment Agency Natural Resources Wales	N/A				
	Site set-up sewage discharge	Permission to discharge trade effluent to sewer.	Water Industry Act	Local water company	10/10/2022	**1 week**	**17/10/2022**		**16/04/2022**
	~~Temporary/permanent works over and in a main river.~~ Works within 7-10m of a main river, note the distance may vary between EA regions. ~~Raising ground levels in the floodplain beside a main river.~~ ~~Construction of a culvert or flow control structure (such as a weir) on any ordinary watercourse.~~	Flood defence consent (formerly known as land drainage consent/ works affecting watercourses consent)	Water Resources Act Land Drainage Act Local Byelaws	Environment Agency Natural Resources Wales	N/A	**TBC**	**TBC**	**TBC**	
	~~Works on flood plains~~	~~Prior permission~~	~~Water Resources Act Land Drainage Act~~	~~Environment Agency Natural Resources Wales y~~	~~N/A~~				
	~~Works on flood defence structures~~	~~Prior permission~~	~~Local Byelaws~~	~~Environment Agency Natural Resources Wales~~	~~N/A~~				
	~~Abstracting or taking water from rivers, streams, lakes, ponds, tidal waters or groundwater.~~ ~~Constructing or altering any impounding works in rivers, streams, ponds or tidal waters.~~ ~~Dewatering activities may require a licence.~~ ~~Note: licence is not required for abstraction for any purpose of less than 20 cubic metres a day.~~	~~Abstraction licence:~~ ~~• Full licence – applicable to most abstractions over 20m3 a day.~~ ~~• Transfer licence – moving water from one location to another with no intervening use.~~ ~~Temporary licence – over 20m3 a day over a period of less than 28 consecutive days.~~	~~Water Resources Act~~	~~Environment Agency Natural Resources Wales~~	~~N/A~~				
	~~Use herbicides near water~~	~~Prior permission~~	~~Food and Environmental Protection Act (Control of Pesticides Regulations)~~	~~Environment Agency Natural Resources Wales~~	~~N/A~~				
	~~Construction works (temp & perm) on the sea bed/within tidal waters/harbour area.~~	~~Marine licence – online pre-application and application process~~	~~Marine and Coastal Access Act~~	~~Marine Management Organisation~~	~~N/A~~				
Waste	Transfer/disposal of controlled waste	Controlled waste transfer notes	Environmental Protection Act Waste (England and Wales) Regulations	Producer Haulier	TBC				
	Transfer/disposal of hazardous waste (England & Wales)	Registration as a hazardous waste producer (Wales only)	Hazardous Waste Regulations	Producer Haulier	N/A				
		~~Hazardous waste consignment notes~~							
	~~Carrying waste other than your own (controlled or hazardous)~~	~~Waste carriers registration certificate~~	~~Waste (England and Wales) Regulations~~	~~Environment Agency Natural Resources Wales~~	~~N/A~~				
	Keep, treat and dispose of waste	Environmental permit May need planning permission	Environmental Permitting (England & Wales) Regulations Town and Country Planning Act	Environment Agency Natural Resources Wales Local authority					

	Site process	Documentation consent/permits /licences	Controlling regulations	Issuing authority	Date Submitted to Issuing authority	Approval Period	Date Consent Approved	Consent / permit / licence ref no.	Surrender Date
	Reuse waste materials off site	Environmental permit or exemption from Environmental Permitting regulations	Environmental Permitting (England & Wales) Regulations	Environment Agency Natural Resources Wales	**TBC**				
Waste Continued	Treatment of contaminated land and water	Mobile Treatment Licence	Environmental Permitting (England & Wales) Regulations Contaminated Land (England) (Amendment) Regulations Contaminated Land (Wales) Regulations	Environment Agency Natural Resources Wales	**Yes**			**TBC**	
	~~Handling asbestos~~	~~Licence for work with asbestos from HSE Asbestos licensing unit~~	~~Control of Asbestos Regulations~~	~~HSE Asbestos Licences Unit~~	~~N/A~~				
	Manufacturing of aggregates and soils from demolition, construction, tunnelling and excavation wastes or waste ash, slag, clinker or rock, e.g. screening of soils.	Exemption from waste management licensing	Environmental Permitting (England & Wales) Regulations	Environment Agency Natural Resources Wales	**N/A**				
Nuisance	Crushing and screening operations Blacktop batching plants	Enviromental permit or exemption (T5/T7) Authorisation to operate a part B prescribed process.	Environmental Permitting (England & Wales) Regulations Pollution Prevention and Control (England & Wales) Regulations	Local authority environmental health Environment Agency Natural Resources Wales	**Yes (Lancashire Crushers)**		**27/09/2022**	**PCC110/2022**	
	Managing noise and vibration levels	Prior consent under Section 61 (optional)	Control of Pollution Act	Local authority environmental health	**Yes**				
Wildlife	Cutting, topping or uprooting protected trees	Prior consent	The Town and Country Planning (Tree Preservation) (England) Regulations Town and Country Planning (Trees Amendment) (Wales)	Local authority planning dept	**TBC**	**Approx. 16weeks**	**TBC**	**133143/VO/2022**	
	~~Works affecting hedgerows~~	~~Prior consent~~	~~Hedgerow Regulations~~	~~Local authority planning dept~~					
	~~Works affecting designated areas i.e. SSSIs, AONB~~	~~Prior consent~~	~~Wildlife and Countryside Act Habitat Regulations Countryside and Rights of Way Act~~	~~Natural England Natural Resources Wales~~					
	~~Works near badger setts~~	~~Prior consent~~	~~Protection of Badgers Act~~	~~Natural England Natural Resources Wales~~	~~N/A~~				
	~~Move/handle protected species (esp. bats, badgers and newts)~~	~~Licence~~	~~Wildlife and Countryside Act Habitat Regulations as amended~~	~~Natural England Welsh Assembly /Natural Resources Wales~~	~~N/A~~				
	~~Removal and/or introduction of fish with inland waters~~	~~Prior consent~~	~~Salmon and Freshwater Fisheries Act~~	~~Environment Agency Natural Resources Wales~~	~~N/A~~				
	~~Treatment of Japanese knotweed – burning on site~~	~~Prior consent~~	~~Wildlife and Countryside Act Clean Air Act Environmental Permitting (England & Wales) Regulations~~	~~Environment Agency Natural Resources Wales Local authority environmental health~~	~~N/A~~				
	Treatment of Japanese knotweed – burial	Formal notification	Wildlife and Countryside Act Environmental Permitting (England & Wales) Regulations	Environment Agency Natural Resources Wales	**TBC**				
Archaeology	~~Demolition or alteration of a listed building and historic structures within its grounds.~~	~~Planning Permission & Scheduled monument consent~~	~~Planning (Listed Buildings and Conservation Areas) Act~~	~~Local planning authority~~	~~N/A~~				
	~~Works on/near scheduled ancient monuments (SAM's)~~	~~Planning Permission & Listed building consent~~	~~Town and Country Planning Act Ancient Monuments and Archaeological Areas Act~~	~~Local planning authority English Heritage Welsh historic monuments~~	~~N/A~~				
	Demolition of an unlisted building in a conservation area.	Planning Permission & Conservation area consent	Planning (Listed Buildings and Conservation Areas) Act	Local planning authority	N/A	**Approx. 16weeks**	**TBC**	**133143/VO/2022**	

Schedule C5 **Site Waste Management Plan**

This declaration is to be used in conjunction with BAM Smart – the web-based sustainability monitoring and reporting tool / BAM Site app. (delete as appropriate)

Project reference	BAA2210
Project title	Victoria North HIF Infrastructure Project
Client	Manchester City Council
Principal contractor	BAM Nuttall Ltd
Site waste coordinator / Environment engineer	Thomas Asson
Contract value	£18 million
Address/location	BAM Compound, Hargreaves Street, Manchester M4 4EJ
Project description	Infrastructure works for residential developments.
Document prepared by	N Peters

Declaration:

We the client and principal contractor confirm that all reasonable steps will be taken to ensure that:

a) all waste from the site is dealt with in accordance with the duty of care in section 34 of the Environmental Protection Act

b) materials will be handled efficiently and waste managed appropriately

Client:	Signed:
Principal contractor:	Signed:
Key subcontractor(s):	Signed:

This plan is reviewed at least every three months by the site waste coordinator and updated as necessary to ensure that waste management practices are in accordance with this plan.

Reviewed by	Date	Rev no.	Revision details (where applicable)

Introduction

This site waste management plan identifies and monitors:

- reuse of materials on the project e.g. cut and fill, site won materials
- waste minimisation implemented on the project
- waste management options for waste generated during the works including waste generated by subcontractors
- any cost savings achieved through waste minimisation

Materials identified within this SWMP are not necessarily statutory waste as they do not fall within the legal definition of waste i.e., 'any substance or object which the holder discards intends to discard or is required to discard.' There is no intention to discard materials such as:

- site won excavated materials
- aggregates crushed in accordance with the WRAP Quality Protocol (on or off site)
- pre-planned use of materials

All materials whether they are imported, reused 'as is' on site, recycled (on or off site) or sent off site for disposal are identified within the plan.

(See Appendix 1 for roles and responsibilities.)

Materials resource efficiency

The following waste reduction and reuse measures have been included in the design and/or specification for this project:

Design specifications	Soils to be retained
Choice of materials	Varying subsoils
Methods of construction	Bulk Earthworks
Pre-fabrication off site	N/A

Forecast of the types and quantities of waste

It is estimated that this site will produce the following types and quantities of waste:

Inert soil and stones	17 05 04	2000	2000
Construction (skip) waste			
Concrete	17 01 01	0	0
Mixed hardcore	17 01 07	0	0
Timber	17 02 01	5	5
Glass	17 02 02	0	0
Plastic	17 02 03	3	3
Mixed metals	17 04 07	3	0
Other mixed construction waste	17 09 04	0	0
Hazardous construction waste	Various	0	0
Mixed municipal waste	20 03 01	260	260
Demolition waste			
Concrete	17 01 01	100	100
Bricks	17 01 02	500	500
Mixed hardcore	17 01 07	250	250
Timber	17 02 01	0	0
Glass	17 02 02	1	1
Plastic	17 02 03	0	0
Mixed metals	17 04 07	20	20
Other mixed demolition waste	17 09 04	20	20
	Totals	18737	17928
		Difference	-809

Management of waste

The production of waste material on this site during the construction phase is avoided wherever possible by following the '*reduce, reuse, recycle, recover*' measures outlined below. Only where these options have been exhausted is waste sent for disposal.

Reduction and reuse measures

The following measures will be employed to reduce and reuse waste on this site:

General	
Reduction measures	**Reuse measures**
• Designed elements to use standard module sizes of available materials	• Rainwater from accommodation roofs to be harvested for use in dust suppression measures
• Accurate measurement, and minimal wastage will be allowed when ordering materials	• Wood chippings to be reused on site
• Materials are to be delivered just in time for the work package	• Site won soils to be reused on site subject to grading criteria and to remedial targets set by the CWRA
• Materials are to be stored and transported correctly so as to avoid damage	•
• Materials are to be kept off the ground by the use of pallets or timber bites	•
• The following components are to be prefabricated: *(Insert any relevant materials)*	•
• All operatives are to receive training on the agreed reduction measures	•
• *(Any other measures)*	•
Concrete and hardcore	
Reduction measures	**Reuse measures**
• Suspended GF slab to be designed to eliminate the requirement for extra fill	• 900 tonnes of hardcore from demolition is to be crushed and reused as aggregate
• Teram to be used under temporary roads to reduce wastage through settlement	• Remaining hardcore from demolition to be crushed and used as fill to excavations
• Concrete orders to be as accurate as possible to reduce possibility of waste	• Excess concrete from pours is to be used to create temporary paths around the site
• *(Any other measures)*	• *(Any other measures)*

Excavated material (soil & stones)	
Reduction measures	**Reuse measures**
• Formation level to be raised to reduce excavation waste	• A cut and fill exercise has been carried out to minimise waste off site
• Soil stabilisation to be used to minimise reduced level dig	• Arisings from excavations to be used as follows:
• Displacement piling to be used in lieu of CFA to reduce spoil	• 2000 tonnes to be used as backfill to excavations
• Mini piles to be used in lieu of pad foundations	• 850 tonnes to be used within landscape bunds
• Reinforced pad foundation to be used, backfilled with excavated material, in lieu of mass pads	• *(Any other measures)*
• Permanent formwork to be used to pile caps and ground beams to eliminate excavated working space	•
• Drainage levels to be raised, and backdropped into manholes, to reduce excavation depths	•
• Trenches to be sheeted rather than battered to reduce excavated material	•
• *(Any other measures)*	•
Timber	
Reduction measures	**Reuse measures**
• Reusable plastic pallets to be used	• Reusable shuttering systems to be employed wherever practicable
• System shuttering to be used wherever practicable	• Off-cuts of plywood to be saved and used to cover holes, and as protection to fragile materials
• Reusable plastic/metal hoardings to be used	• Designated area for waste timber to be set up for free reuse by others
• *(Any other measures)*	• *(Any other measures)*
Metals	
Reduction measures	**Reuse measures**
• *(Any other measures)*	• Off-cuts from long pipe work runs are to be stored for reuse in small runs
	• *(Any other measures)*

Recycle and recovery measures

The following waste streams are to be segregated for recycling/ recovery off site:

Waste stream	EWC code	Storage option	Management option
• Paper and cardboard	20 01 01	labelled bins	
• Excavation waste	17 05 04		Recycling within works
• Packaging	15 01 06	labelled bins	
• Plastic	20 01 39	labelled bins	
• Timber	17 02 01	labelled bins	
• Mixed Metals	17 04 07	labelled bins	
• Mixed waste	17 09 04	labelled bins	

Project close-out review

This section of the plan is completed prior to the project close-out review and discussed as part of the review meeting. The estimated quantities are drawn from the table in section 2 and reconciled against the actual quantities removed from site as detailed in BAM SMaRT / BAM Site app (delete as appropriate).

Comparison of estimated and actual quantities

Source and type of waste	EWC Code	Estimated quantity of waste (tonnes)	Actual quantity of waste (tonnes)
Excavation waste			
Hazardous excavated material	17 05 03*		
Non-hazardous soil and stones	17 05 04		
Inert soil and stones	17 05 04		
Construction (skip) waste			
Concrete	17 01 01		
Mixed hardcore	17 01 07		
Timber	17 02 01		
Glass	17 02 02		
Plastic	17 02 03		
Mixed metals	17 04 07		
Other mixed construction waste	17 09 04		
Hazardous construction waste	Various		
Mixed municipal waste	20 03 01		
Demolition waste			
Concrete	17 01 01		
Bricks	17 01 02		
Mixed hardcore	17 01 07		
Timber	17 02 01		
Glass	17 02 02		
Plastic	17 02 03		
Mixed metals	17 04 07		
Other mixed demolition waste	17 09 04		
	Totals	0	0
		Difference	0

Delete / add waste streams as appropriate by double clicking on this table.

Explanation of any deviation from the original plan

Appendix 1 Roles and responsibilities

The Clients Representative will:

- Appoint a Principal Contractor
- Provide the Principal Contractor with details of all decisions taken before the site waste management plan was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site
- Ensure a construction phase SWMP is produced

The agent for the Principal Contractor will:

- Ensure the SWMP for the construction phase is produced, and distributed to all staff and subcontractors
- Ensure that within three months of project completion:
  - that the plan has been monitored on a regular basis
  - section 5.1 is completed comparing estimated quantities with actual
  - section 5.2 is completed to explain any deviation from the plan
  - section 5.3 is completed to estimate the cost saving that have been achieved
- Keep a copy of the SWMP for a minimum of two years after project completion

The site waste co-ordinator / environmental engineer for the Principal Contractor will:

- Produce the construction phase SWMP prior to works starting on site
- Obtain from the client details of all decisions taken before the site waste management plan was drafted on the nature of the project, its design, construction method or materials employed in order to minimise the quantity of waste produced on site, for inclusion in the construction phase SWMP
- Keep a copy of the SWMP on site and display in suitable locations for information
- Review the plan monthly and update where necessary to accurately reflect progress
- Ensure the following waste data is recorded within BAM Site app when any waste is removed from site:
  - a description of the waste, including the 6 figure EWC code
  - the name of the company collecting the waste (waste carrier)
  - the site where the waste is being taken to (waste destination)
  - the quantity of the waste and whether it was;
  - reused on site
  - taken for reuse at an exempt or standard permit site
  - taken to a transfer station for segregation and onward recycling
  - taken to a dedicated recycling facility
  - sent to landfill (only if all other options have been discounted)
- Ensure details of recycling figures for the transfer stations used within the region are obtained and entered onto BAM Site app on a quarterly basis
- Ensure details of all waste carrier registration numbers, environmental permit numbers and exemption references for the carriers and disposal sites used within the region are verified in consultation with the Environmental Advisor and retained on site in accordance with the site documentation control procedure.

Schedule C6 **Refuelling procedure**

- No refuelling to be undertaken in close proximity of surface waters, drains, open excavations, grips
- Only trained nominated personnel to carry out refuelling operations

Prior to refuelling, ensure.

- You are in a safe position (i.e., no moving plant with free access to refuelling point)
- A suitable spill kit is available
- Check condition of hoses, nozzle for defects
- Deploy plant nappy at refuelling point

During refuelling, ensure;

- Correct refuelling cap is removed (i.e., not a water tank)
- Funnels to be used at all times when refuelling containers
- Refuelling operations are supervised at all times
- Due care and attention is paid to prevent drips and spills
- Return fuel hose to its hook and that lids/caps are replaced on fuel containers/plant
- Fuel tanks are secured after use and drums are stored upright in an area where they will not be knocked over or damaged

Nominated refuellers		
Name	**Position**	**Toolbox talk PP8 Briefed**
Stephen Donaldson	General Foreman	Completed
Dan King	Supervisor	Completed
		Tick if carried out
		Tick if carried out
		Tick if carried out
		Tick if carried out

Report all spills, leaking fuel lines, hoses or tanks to your supervisor

Section D Quality

D1.0 Introduction

This quality plan is applicable to the process of undertaking the project works at Victoria North for the provision of services in accordance with the contract and specification as described in **Section A, Table 1.1** of this document.

It defines the managerial arrangements required to meet and exceed the requirements of the project and Manchester City Council. It is prepared as a result of the project start up review, by **the agent** taking account of particular project requirements.

This quality plan together with Section A documents the necessary information required to effectively manage project quality from project planning to project delivery. It makes use of subsidiary documents such as BAM Nuttall procedures, project specific procedures, activity plans, task instructions, risk assessments and records that are used to control the works.

This plan, together with section A of this project execution plan, activity plans and associated inspection and test plans meet the requirements of ISO 10005 *Quality management guidelines for quality plans.* A compliance schedule detailing relevant sections of this project execution plan in relation to ISO10005 is contained in Appendix 2.

D2.0 Quality Plan

D2.1 Project quality requirements - *NP25.3: Technical and engineering delivery during the construction and project management phase*

Delivery of the quality, technical and engineering requirements of the project is managed primarily by ensuring an understanding of these requirements, use of a team of suitable and competent personnel and the undertaking of adequate planning.

D2.2 Quality programme - *NP24: Activity plans*

The overall manner in which quality hazards are controlled is set out in the project quality programme of **Schedule D1**. This high-level plan defines the programmed task and identifies the documents to manage and demonstrate quality in relation to the specific activity. Sub-contract work is included within the quality programme.

This constitutes the development of activity plans from a quality perspective. Activity Plans are prepared. A list of activity plans for programmed activities for this project are referenced in schedule **D1 Quality programme.**

D2.3 Verification of requirements - *NP25.4: Technical and engineering delivery of a construction activity on site*

To verify that this planning is successful in controlling quality, the work is monitored closely and verified as it progresses. Verification is normally carried out by sampling, inspection and testing. Work which cannot be verified by final inspection or test (special processes) is controlled by monitoring that the work activity is undertaken in accordance with the agreed procedure.

These verification arrangements are set out in the inspection and test plans, or checklists prepared for the programmed activity. If BAM Nuttall is contractually responsible for certification of the works under a rigorous self-certifying system based on checklists for each item of work, this is indicated in the quality programme.

Inspection and test plans or checklists define the means of demonstrating that specified requirements are met. They list inspection/test procedures, frequency of testing, witness/approvals, responsibility for test and record requirements.

The extent to which checklists are prepared and completed for items of work is dependent on the risk of nonconformity. This risk is a function of the complexity of the work activity, the competence of the resources undertaking it and the consequences of failure. A list of inspection and test plans or checklists is contained in **schedule D2** to this plan.

D3.0 Preservation of product

D3.1 Weather dependent work

Some work which is sensitive to temperature or moisture can only be carried out at certain times of the year unless additional controls such as protection from the elements are introduced. Activities which are weather dependent are listed in **Table D3.1** with details of the controls to be used if any.

Table D3.1: Weather dependent work

Activity	Control measure
Concrete work	Ensure batching plant has heated water facility Use frost blankets
Blacktop	Comply with specification temperature limits
Structural steelwork welding	Provide protective shelter
Earthworks	Limited in wet weather
Lifting Operations	Approved Lift plan, not to be carried out in high winds
Tree felling	No works to be completed in high winds

D3.2 Preservation of work

Some items of work are susceptible to damage from following activities unless protective measures are introduced. Work elements for which such measures will be taken are listed in **Table 3.2** together with outline details of the protection to be provided.

Table D3.2: Preservation of work

Work element	Protective measures
Earthworks	Compacted or sealed to prevent saturation/excessive moisture loss/dust
Drainage	Ensure ample cover, use road plates where heavy vehicles will go over the pipes
Ducting	Ensure ample cover, use plates/concrete capping where heavy vehicles will go
Highway construction	Restrict vehicle access whilst each layer is trimmed. Block access when it is wet. Leave the surface to cool/cure before driving on it. No machines with metal tracks to use newly paved surfaces.
Hydroseeding	Restrict access to seeded areas with barrier. Inform the workforce of these areas in the briefings.
Block paving	No heavy vehicles over the blocks. No muddy wheels over the blocks.

Schedule D1.1 Quality Plan Activity Table –

Programme Activity	Works Information or Specification	Control documents	Responsibility				Verification document	Other documented information
			BN	SC	C	O		
Site welfare setup	NS1 – Welfare SG21 – Welfare Facilities and work environment	TBC	R AR SD		R		TBC	Test certificates as defined in ITP01 and / or ITC01.01 Or records in 360 field
Earthworks							ITP02	
Concrete								

CODES:				
APP Approval Required AR Submit Documents for Review	DI Submit Documents for Information DR Document required	R Review Documents SD Submit Verifying Documents	BN: BAM Nuttall SC: Sub-contractor	C: Customer O: Other (provide detail)
Document Notes: Individual inspection and test plans / checklists define in detail witness, approval and hold points, along with all documented information required for approval.				

Schedule D1.2 Register of project procedures

Reference	Title	Author	Rev	Review Date
XXX.000. P001	Document management procedure	J Blogs	00	Jan 2017

Use this sheet as part of the PEP to list project specific procedures

Alternatively, state here that this schedule will be maintained as part of the project document management system and updated from time to time as procedures are identified as being necessary.

Schedule D1.3 Register of activity plans and inspection and test plans / checklists

VNIF-BNL-ZZ-YYY-RE-W-0003

Activity Plan Reference	Title	Author	Date Required	Date Issued	Review Date	ITP /ITC Reference	Work Status
BAA.2210-AP01	Installation of temporary boundary fence for initial compound	D.Kiely	25/01/2022	26/01/2022	TBC	TBC	Complete
BAA.2210-AP02	Repairing existing fence over site	D.Kiely	27/01/2022	28/01/2022	TBC	TBC	Complete
BAA.2210-AP03	Site enabling works	D.Charlton	31/01/2022	26/01/2022	TBC	TBC	Live
BAA.2210-AP04	Footpaths, trial pits and investigations	D.Kiely	18/03/2022	21/03/2022	TBC	TBC	Complete
BAA.2210-AP05	Trial Pits in road (not used as Bethells completed them)	D.Charlton	N/A	N/A	N/A	N/A	Live
BAA.2210-AP06	Haul Road from Creamline	D.Charlton	20/05/2022	22/05/2022	TBC	TBC	Live
BAA.2210-AP07	Removal of hard standing area and concrete over site	I.Penny	19/07/2022	20/07/2022	TBC	TBC	Live
BAA.2210-AP08	Access through Honey Street Retaining wall	D.Charlton	20/05/2022	20/05/2022	TBC	TBC	Live
BAA.2210-AP09-RA09	Removal of mesh metal fencing over site	T.Asson	09/08/2022	09/08/2022	TBC	TBC	Live
BAA.2210-AP10	Over pumping trade effluent water on Haul Road Plateau Ch280-380	J. Annett	19/07/2022	20/07/2022	TBC	TBC	Live

Appendix 1: Construction Design & Management Regulations 2015 (CDM) compliance schedule

CDM Appendix 3 Reference		Relevant Section of the PEP		
		Schedule	Section	Title
5(a)	Description of the project		A2.1	The project works
	Programme and key dates		A4.4	Project programme
	Key members of the team (Management structure and responsibility)	A1	A2.5.1, A2.5.3	Organisation and responsibilities Client and other stakeholder communication The project works
	Extent and location of existing records and plans that are relevant to health and safety on site (Pre-construction information)		A3.2	Inputs into the plan Project design Risk and opportunities
5(b)	The management of the work			
	Health and safety aims for the project.		A2.4	Project objectives
	Site rules (cover but not be limited to) PPE Parking Use of radios, mobile phones Smoking, restricted areas Hot works Emergency arrangements (Brought to the attention of everybody on site) *Also translation of site rules if required.*	A5 A6	A5.6	Induction Workforce engagement Co-ordination of contractors Drugs and alcohol Incident and Emergency arrangements PPE Workplace transport
	Arrangement to ensure co-operation between project team members and co-ordination of their work (Site meetings)		A5.1 A5.2 A5.3 A5.4	Client communication Workforce engagement Management of sub-contractors Co-ordination of contractors Project review (meetings) Project verification
	Arrangements for involving workers		A5.5	Workforce consultation Project verification
	Site induction	A5	A5.6	Site induction
	Welfare facilities and first aid	B1	B2.4	Welfare facilities First aid
	Fire and emergency procedures	A6	B2.1	Fire safety Incident and emergency arrangements
5(c)	Control of any specific site risks listed in schedule 3 where they are relevant to the work involved.			
	Burial under earth-falls		B4.5 B4.6 B4.7	Excavations Other significant risks
	Engulfment in swampland		B4.6	Excavations Other significant risks
	Falling from height		B4.3	Work at height
	Chemical or biological substances, legal requirement for health monitoring		B3.6	Asbestos Contaminated land Hazardous substances

CDM Appendix 3 Reference		Relevant Section of the PEP		
		Schedule	Section	Title
				Other significant risks Health surveillance UV radiation
	Work with ionising radiation (Designation of controlled or supervised areas under regulation 16 of the Ionising Radiation Regulations		B4.15	Ionising radiation
	Work near high voltage lines		B4.1	Overhead services
5(c)	Control of any specific site risks listed in schedule 3 where they are relevant to the work involved.			
	Work exposing workers to the risk of drowning		B4.10	Work over or near water
	Work on wells, underground earthworks and tunnels		B4.9 B4.9.1	Confined spaces Other significant risks
	Work carried out by divers having a system of air supply		B4.11	Other significant risks
	Work carried out in caissons with a compressed air atmosphere		B4.9	Other significant risks
	Work involving the use of explosives		B4.16	Explosives
	Work involving the assembly or dismantling of heavy prefabricated components		B4.14	Other significant risks

Appendix 2: BS ISO 10005 compliance schedule

BS ISO 10005:2018 reference		Relevant section of project execution plan	
6.2	Scope of the quality plan	A1 A2.1	Introduction The project works
6.3	Quality plan inputs	A1.1.3	Inputs to the plan
6.4	Quality objectives	A2.4	Project objectives and targets
6.5	Quality plan responsibilities	A1.1 A2.5 A5 A6.2 Schd A1	Project execution plan administration Management arrangements Communication Audits Organisation chart
6.6	Control of documented information	A5.7	Project documented information
6.7	Resources	A4.3	Project planning
6.7.1	Provision of resources	A4.3	Project planning
6.7.2	Materials, products and services	A2.6.1	Procurement of goods and services for the project
6.7.3	People	A2.5.1 A2.5.2	Project organisation Personnel selection
6.7.4	Infrastructure and environment for the operation of processes	A3.3 D3.0	Health, safety, quality and environmental risk - construction phase Preservation of work
6.7.5	Monitoring and measuring resources	A2.5.1 A2.5.2 D2.3	Project organisation Personnel selection Verification of requirements
6.8	Customers and other interested parties' communication	A2.1 A5	The project works Communication
6.9	Design and development	A4	Project design, planning and programming
6.9.1	Design and development process	A4.1	Project design
6.9.2	Control of design and development changes	A4.1	Project design
6.10	Externally provided processes, products and services	A2.6	Supply chain management
6.11	Production and service provision	D2.1	Project quality requirements
6.12	Identification and traceability	A2.7	Product traceability
6.13	Property belonging to customers or external providers	A2.6.1 A2.7 A6.1.1 D2.3	Procurement of goods and services for the project Product traceability Quality non-conformity Verification of requirements
6.14	Preservation of outputs	D3	Preservation of work
6.15	Control of nonconforming outputs	A6.1.1	Quality non-conformity
6.16	Monitoring and measurement	D2.3	Verification of requirements
6.17	Audits	A6.2	Audit and inspection
7.1	Review and acceptance of the quality plan	A1.1 A2.5	Project execution plan administration Management arrangements
7.2	Implementation and monitoring of the quality plan	A1.1 A2.5.2 A6.2 A6.3 D2.2	Project execution plan administration Personnel selection (competence, knowledge, awareness) Audit and inspection Review Quality programme
7.3	Revision of the quality plan	A1.1	Project execution plan administration
7.4	Feedback and improvement	A6.3 A6.4	Review Improvement

Appendix 3: Compliance Matrix for NR/L2/ENV/015 Contract Requirements Environment (Mandatory Requirements)

Network Rail: NR/L2/ENV/015		BAM Nuttall Compliance
Clause Ref:	Title	PEP Section
7.1	Requirement and consents	C6.4 Schedule C3.4
7.2	Objectives and targets	A2.4
7.3	Roles and Responsibilities	A2.5.3
7.4	Competence, training and awareness	A2.5.2
7.4.1	Internal Communication	A5
7.5	External Communication & Managing lineside Neighbours	A5.1 A5.4 Schedule A3
7.6	Records and Documentation	A5.7
9.1	General Environmental Management (Works Contract)	C6 Schedule C1 Schedule C2
9.2	Air Quality (Works Contract)	C7.5 Schedule C1
9.3	Archaeology and Culture Heritage (Works Contract)	C7.7 Schedule C1 Schedule C2
9.4	Contaminated Land (Works Contract)	C7.4 Schedule C4
9.5	Ecology (Work Contract)	C7.6 Schedule C1 Schedule C2
9.6	Energy (Works Contract)	C7.8
9.7	Herbicide and Pesticides Application (Work Contract)	C7.1.1
9.8	Landscape (Works Contract)	C7.10
9.9	Lighting (Works Contract)	C7.5 Schedule C1 Schedule C2
9.10	Materials (Works Contract)	C7.9
9.11	Noise and Vibration (Works Contract)	C7.5 Schedule C1 Schedule C2
9.12	Public Highways (Works Contract)	C6.1 Schedule C1 Schedule C2

Network Rail: NR/L2/ENV/015		BAM Nuttall Compliance
Clause Ref:	Title	PEP Section
9.13	Waste (Works Contract)	C7.3 Schedule C5
9.14	Water (Works Contract)	C7.1 Schedule C1 Schedule C2
11.1	Incident Response Plan (Works Contract)	A5.6 Schedule A6
11.2	Incident Reporting (Works Contract)	A5.6 Schedule A6 Schedule C6
11.3	Incident Investigation (Works Contract)	A6.1.3

Appendix 4: Compliance Matrix for NR/L3/INI/CP0028 Issue 3 Contract Requirements Quality (Mandatory Requirements)

Network Rail: NR/L3/INI/CP0028		**BAM Nuttall Compliance**
Clause Ref:	Clause & Title of requirement	PEP Section
6.1	Scope	A2.1
6.2	Quality Objectives	A2.4 A2.6 A4.1
6.3	Management Responsibilities	A2.5. Schedule A1
6.3.1	Project Team Roles & Responsibilities for Quality	A2.5.3 A6.2 A6.3 Schedule A1 Schedule A4 D2.1
6.3.2	Contractor's Quality Representative	A2.5.3 Schedule A1
6.3.3	Authorised Signatories	A2.5.3
6.4	Documentation	A5.7
6.4.1	Internal and External Standards	A5.7 Sectional rail standards
6.4.2	Document Control	A5.7
7.1	Quality Reports	D2.1
7.2	Records	A5.7
7.3	Resources	A2.4
7.3.1	Human Resources	A2.4
7.3.2	Infrastructure & Work Environment	D2.1
7.4	Customer Specifications	A1.1.3
7.4.1	Process Potential Studies	A6.1 A6.2
7.4.2	Process Control Plans	D2.2
7.5	Customer Communication	A5.1
7.6	Design & Development	A4.1
7.6.1	Design & Development Verification	A4.1

Network Rail: NR/L3/INI/CP0028		BAM Nuttall Compliance
Clause Ref:	Clause & Title of requirement	PEP Section
7.6.2	Design & Development Validation	A4.1.1
7.7	Change Management	A5.7.2
7.8	Storage & Handling	A2.6 D3
7.8.1	Identification & Traceability	D2.3
7.8.2	Customer Supplied Product	A2.6.1
7.9	Monitoring & Measurement	A6 D2.3
7.9.1	Statistical Process Control	A6 A6.4
7.9.2	Initial Sample Submission	A2.6
7.9.3	Failure Mode and Effects Analysis	A3.1 A4.3
7.10	Control of Monitoring & Measuring Equipment	A2.7
7.11	Inspection and Test Plans	D2.3
7.12	Audit	A6.2
7.13	Non-conformance Management	A6.1.1

Appendix 5: Work Package Planning Process

N/A for this project

Appendix 6: Compliance Matrix for NR/L2/OHS/0044/F01 Construction Phase Plan

Network Rail NR/L2/OHS/0044/F01		BAM Nuttall Compliance (Section)
1	Introduction	A1
1.1	Purpose of the construction phase plan	A1
2	**Planning for the construction phase**	A4.3
2.1	Project specific health and safety goals	A2.4
2.2	Project description and programme details	A2.1
2.3	Services and isolation points	B4.1.1
2.4	Access restrictions	A4.5 Schedule A8
2.5	Asbestos	B3.4 B4.17
2.6	Any line open operations	B4.18
2.7	Temporary works	B4.2
2.8	Construction phase plan review	A6.3.1
3	**Working together**	A2.5.1 A6.3.1 Schedule A1
3.1	Changes to key personnel	A2.5.2 A6.3.1 Schedule A4
3.2	CDM appointments	A2.5.2 A6.3.1 Schedule A4
3.3	Network Rail project organisation	A2.5.1 A5.1 Schedule A1
3.4	Principal Contractor's delivery organisation	A2.5.1 A2.5.2
3.5	Communication during the construction phase	A5
3.6	Exchange of design information	A2.1 A5.2
3.7	Changes to design	A4.1 A5.7.2
4	**Hazard management**	A3.2
4.1	Work involving particular risks	A3.2 A3.3
4.2	Significant construction health and safety risks	A3.2 A3.3
5	**Organise**	D3.2
5.1	Brief outline of work methodology	D3.2
5.2	Management of work package plans	D3.2
5.3	Schedule for the production of work package plans	A4.4 D2.3 Schedule D2
5.4	Site emergency arrangements	A3.4
5.4.1	First aid arrangements	B2.2
5.4.2	Evacuation procedure	A3.4 Schedule A6
5.4.3	Fire safety	B2.1
5.4.4	Security	A2.3
5.4.5	Summoning emergency services	A3.4 Schedule A6

Network Rail NR/L2/OHS/0044/F01		BAM Nuttall Compliance (Section)
5.4.6	Railway emergency (trains and electrical)	A2.1 Schedule A6
5.4.7	Asbestos	B3.4 B4.1
5.4.8	Utilities	B2.3 B4.1
5.4.9	Other emergency arrangements	A3.4 Schedule A6
5.5	Safety and environmental event reporting and recording	A6.2.2
5.6	Site Specific Rules	A5.6 Schedule A5
5.7	Induction	A5.6 Schedule A5
5.8	Welfare	B2.4 Schedule B1
5.9	Monitoring arrangements	A6.2
5.10	Management reporting arrangements	A6.1.2
6	**Health and safety file**	A5.7.1.1
6.1	H&S File	A5.7.1.1
Appendices	Supporting information	Connect Documents manual

Appendix 7: BIM execution plan

Located here:

VNIF-BNL-ZZ-YYY-SP-W-0001

Acoustics
Air Quality
Carbon & Net Zero
Lab & Site Testing
Monitoring
Noise & Vibration
Odour & Dust
Sustainability

Project

Victoria North
Baseline Noise Survey Results

Prepared for

BAM Nuttall Ltd.
BAM Nuttall Site Compound,
Hargreaves Street,
Manchester,
M4 4EJ

Published

28 January 2025

Acoustics
Air Quality
Carbon & Net Zero
Lab & Site Testing
Monitoring
Noise & Vibration
Odour & Dust
Sustainability

Quality Assurance	
Project Title:	Victoria North
Report Title:	Baseline Noise Survey Results
Report Number:	82511-SRL-RP-YA-01-P1
Client:	BAM Nuttall Ltd.
Client Address:	BAM Nuttall Site Compound, Hargreaves Street, Manchester, M4 4EJ
Author:	Jack Miller BEng (Hons) AMIOA
Checker:	Robbie Pattison BSc (Hons) MIOA

Version History

Version	Date	Comments	Approved by
P1	28/01/2025	-	Robbie Pattison

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2.0 Results 5

3.0 Survey Notes 6

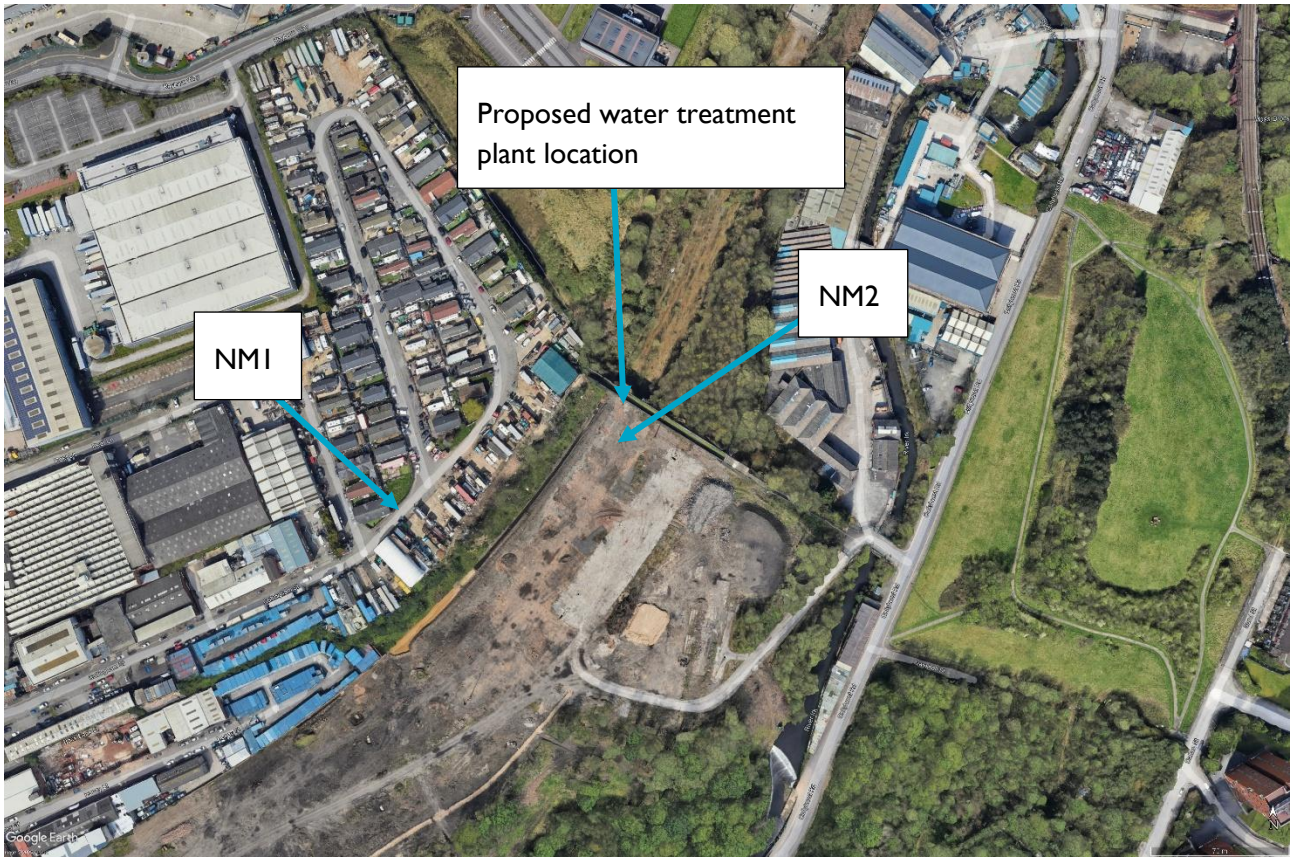
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Appendix B – Noise Monitoring Graphs 10

1.0 Introduction and Survey Methodology

A permanent water treatment plant is proposed which will serve the Victoria North development, off Collingham Street, M8 8RQ. SRL visited the site of the proposed plant and measured baseline noise levels with two unattended noise monitors between 14:00 16th January and 15:00 21st January 2025.

Figure 1 - Measurement locations



Noise monitor NM1 was in a position representative of the nearest sensitive receptors which are residential dwellings in Fairholme Park, Collingham Street. The location chosen was the most suitable compared to other alternative locations, as is was safe and secure and in a position that would not pose as a tripping hazard for the residents of Fairholme park. Noise from a resident's radio/loudspeaker system was observed towards the eastern receptors, therefore a location further away from this was also ideal as the temporary noise would affect the average noise levels measured by the monitor. The location chosen was comparable in terms of noise from external sources, to the east side of Fairholme park which has the nearest receptors to the proposed plant location.

Noise monitor NM2 was positioned on the development site, in a location representative of new residential receptors planned as part of the wider Victoria North development.

2.0 Results

2.1 Daytime (07:00 to 23:00) Noise Levels

Measurement Position	Average Noise levels dB $L_{Aeq,16hr}$	Typical Background Noise levels dB $L_{A90,1hr}$	Typical Maximum Noise levels dB $L_{AFmax,1hr}$
NM1	58	43	83
NM2	51* (47)	46* (43)	72* (62)

*Daytime noise levels measured at position NM2 included noise from nearby construction activities during the day, which increased the overall average. This was evident from observations on site and can be seen in the graph in Appendix B of this report, as the peaks in noise levels are confined to the hours of 07:00 to 16:00 on weekdays. The average daytime noise level at NM2, excluding noise from construction, is 47dB $L_{Aeq,16hr}$. The typical background noise levels for NM2 excluding periods where noise has been affected by construction noise is 43 dB $L_{A90,1hr}$ and the typical maximum noise level is 62dB $L_{AFmax,1hr}$.

2.2 Night-time (23:00 to 07:00) Noise Levels

Measurement Position	Average Noise levels dB $L_{Aeq,8hr}$	Typical Background Noise levels dB $L_{A90,15min}$	Typical Maximum Noise levels dB $L_{AFmax,15min}$
NM1	45	38	74
NM2	44	40	54

The representative typical background noise levels have been determined by a statistical analysis using a histogram of the measured data. In the case of NM2 these were the modal values which were deemed as the representative levels.

3.0 Survey Notes

Noise sources observed whilst on site in the daytime near NM1 were mainly activities within Fairholme park. Activities included noise from workshops, trailers and lorries associated with Fairholme park. Contributions were also noted from road traffic noise, principally from the A664 Rochdale Road to the south and the A665 Cheetham Hill Road to the west.

Noise sources observed whilst on site in the daytime near NM2 were from construction activities to the southeast. Contributions were also noted from road traffic noise, principally from the A664 Rochdale Road to the south and the A665 Cheetham Hill Road to the west. The nearest road (Collyhurst Road) was observed to have little traffic during the day and was not audible to the surveyor on site.

Overall the noise levels on the development site and at nearby residential receptors were not significantly affected by road noise. Excluding the noise from temporary construction activities, the development site was observed to be 'quiet'.

Appendix A - Survey Details

A1. Location of Survey

Cheetham Hill, Manchester M8 8RQ

A2. Date & Time of Survey

- NM1
  - 14:30 16th January to 14:30 21st January 2025
- NM2
  - 14:00 16th January to 15:00 21st January 2025

A3. Personnel Present During Survey

Jack Miller BEng (Hons) AMIOA

A4. Weather Conditions during Survey

Time Period	Temperature (°C)	Wind speed (mph)	Wind direction	Precipitation (mm)
16/01/2025 12:00	6 – 10	4	S	0
16/01/2025 18:00	4 – 6	6	S	0
17/01/2025 00:00	5 – 6	6	S	0
17/01/2025 06:00	5 – 8	4	S	0
17/01/2025 12:00	7 – 8	4	S	0
17/01/2025 18:00	6 – 8	2	N	0
18/01/2025 00:00	3 – 6	4	S	0
18/01/2025 06:00	2 – 3	5	S	0
18/01/2025 12:00	1 – 2	3	N	0
18/01/2025 18:00	0 – 1	2	N	0
19/01/2025 00:00	-1 – 0	4	SE	0
19/01/2025 06:00	0 – 1	5	S	0
19/01/2025 12:00	1 – 2	4	S	0
19/01/2025 18:00	2	2	N	0

Time Period	Temperature (°C)	Wind speed (mph)	Wind direction	Precipitation (mm)
20/01/2025 00:00	2 – 3	3	N	0
20/01/2025 06:00	2 – 4	2	N	0
20/01/2025 12:00	4 – 5	2	N	0* (negligible, light rain)
20/01/2025 18:00	4 – 5	4	S	0
21/01/2025 00:00	5	3	S	0
21/01/2025 06:00	5	5	S	0
21/01/2025 12:00	5 – 6	4	S	0

Data obtained from Manchester weather station on www.timeanddate.com/weather

A5. Instrumentation

Norsonic - Noise Logger HL1

Description	Make	Type	S/N
Sound Level Meter	Norsonic	Nor 140	1404560
Calibrator	Brüel & Kjær	Type 4231	2545771
Pre-amp	Norsonic	Type 1209	13927
Microphone	Norsonic	Type 1225	157421
De-humidifier	Norsonic	Type 1284	255

Norsonic - Noise Logger HL2

Description	Make	Type	S/N
Sound Level Meter	Norsonic	Nor 140	1404737
Calibrator	Brüel & Kjær	Type 4230	1541905
Pre-amp	Norsonic	Type 1209	23081
Microphone	Norsonic	Type 1225	128712

Description	Make	Type	S/N
De-humidifier	Norsonic	Type 1284	330

A6. Calibration Procedure

Before and after the survey the measurement apparatus was check calibrated to an accuracy of ±0.3 dB using the type 4231 Sound Level Calibrator. The Calibrator produces a sound pressure level of 94.1 dB re 2 x 10^{-5} Pa at a frequency of 1 kHz.

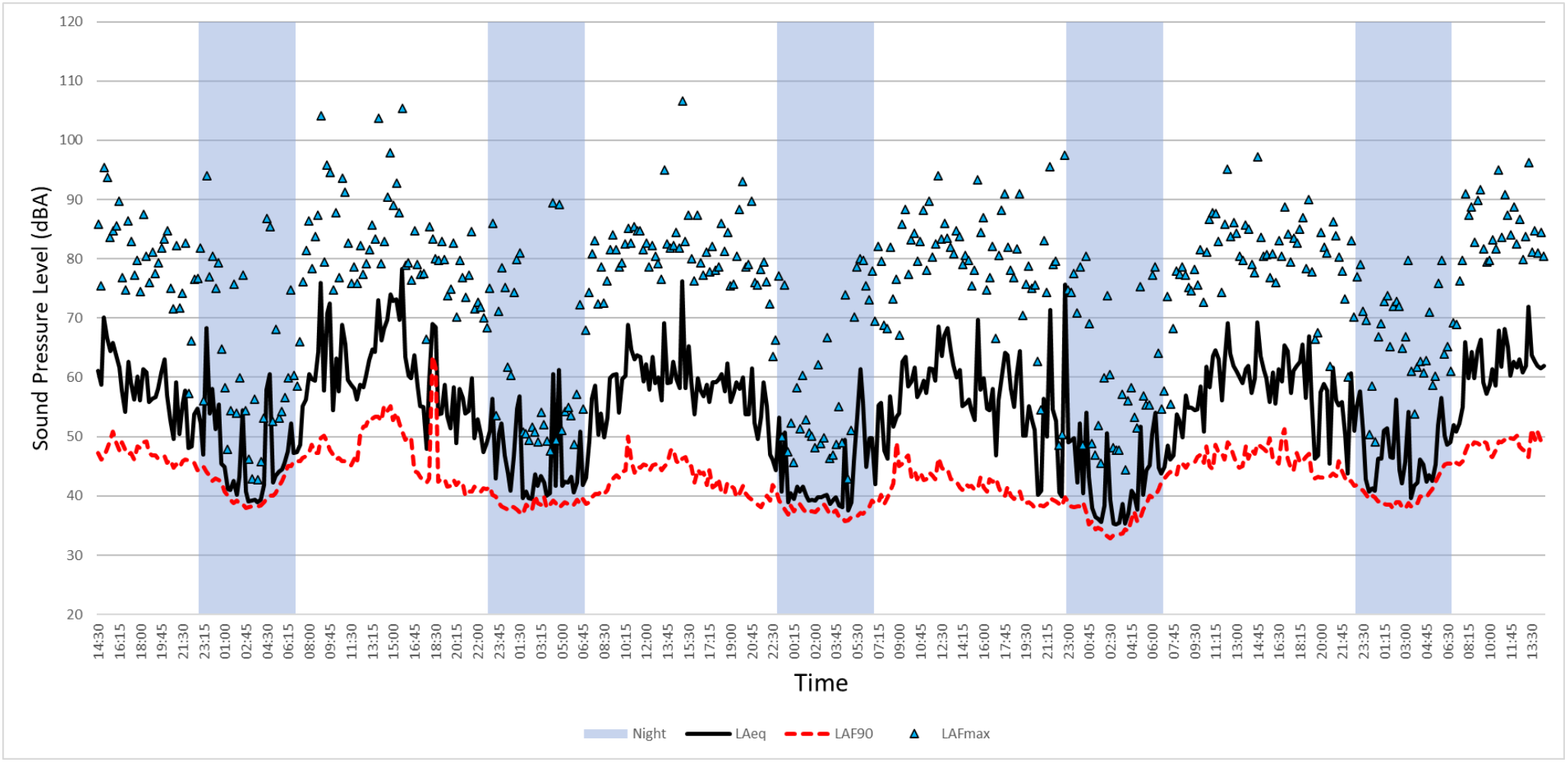
Before and after the survey the measurement apparatus was check calibrated to an accuracy of ±0.3 dB using the type 4230 Sound Level Calibrator. The Calibrator produces a sound pressure level of 114 dB re 2 x 10^{-5} Pa at a frequency of 1 kHz.

Sound Level Meter HL1 was calibrated in a laboratory on 3/11/2023.

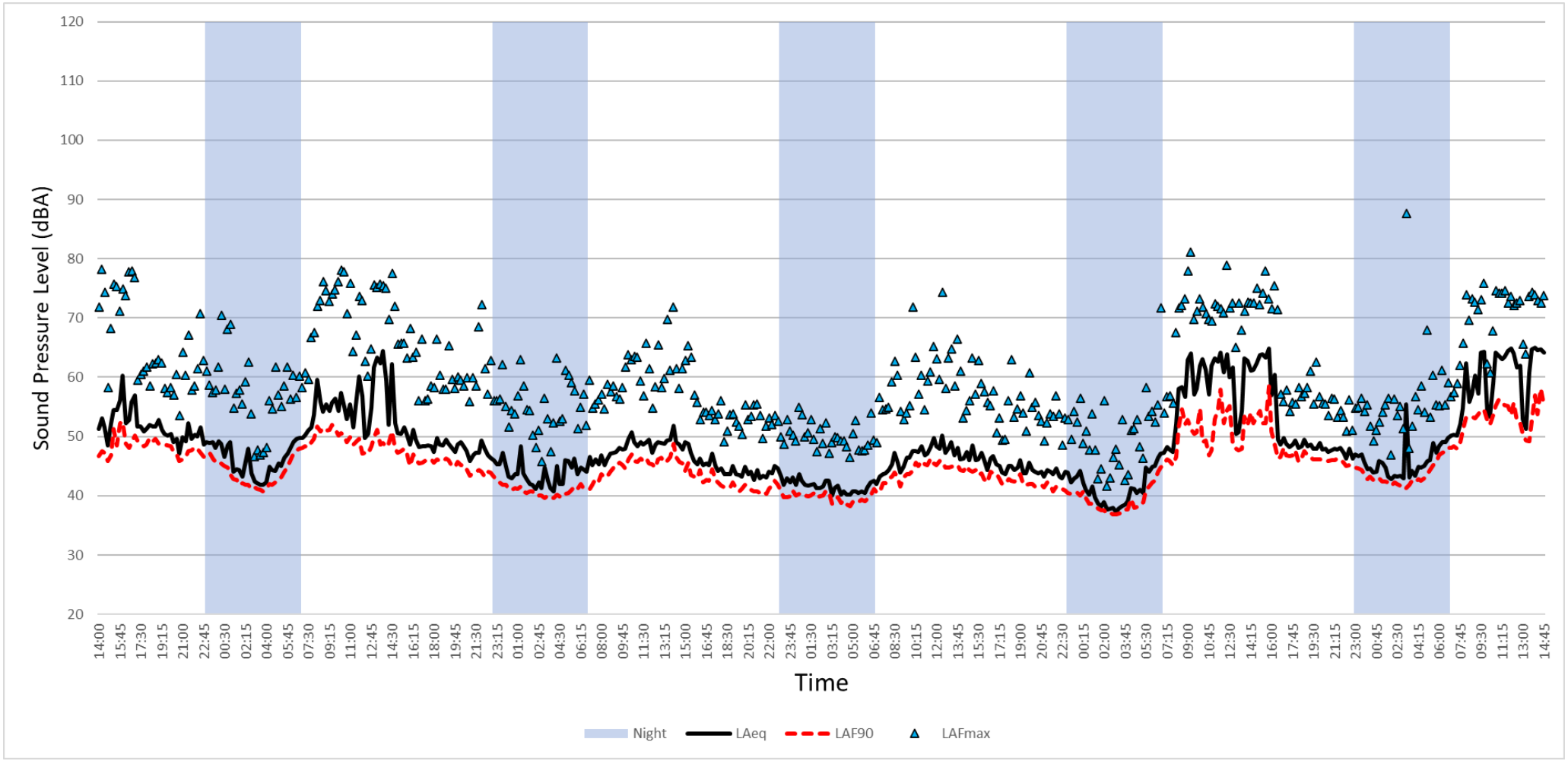
Sound Level Meter HL2 was calibrated in a laboratory on 26/10/2023.

Appendix B – Noise Monitoring Graphs

B1. NM1 – Noise Time Graph



B2. NM2 – Noise Time Graph



Acoustics
Air Quality
Carbon & Net Zero
Lab & Site Testing
Monitoring
Noise & Vibration
Odour & Dust
Sustainability

Acoustics

Since 1967, our team of acoustic consultants has played a key role in major projects where noise or vibration is an issue, in the UK and across the globe – whether it's planning, performance prediction, design, inspection, troubleshooting, measurement or commissioning.

Air Quality

We offer a comprehensive service to model, monitor and analyse air quality, delivering assessments for a broad range of projects and purposes, for both private and public sector clients.

Carbon & Net Zero

Top of the agenda is tackling energy and carbon reduction to limit the impact of climate change. Our team of consultants will help you to achieve your sustainability objectives.

Lab & Site Testing

Design based on test data will always achieve the best results – and that's why we offer a wide range of acoustic testing at our independently accredited laboratories, as well as on-site testing to support live projects.

Monitoring

Our specialist services to monitor and assess noise, vibration, dust, air quality and odour employ the latest technology to provide remote access to data, helping to address issues quickly and to protect our clients.

Noise & Vibration

Ensuring noise and vibration does not exceed agreed levels is an important part of our environmental management services, using state-of-the-art technology to access real-time data remotely, to enable swift remedial action if required.

Odour & Dust

As part of our portfolio of environmental monitoring services, we offer specialist advice on the adverse impact of dust and odour across a range of projects including construction, waste handling and mineral extraction.

Sustainability

Minimising the impact on the environment is at the centre of today's business objectives. Our specialist services help our clients to fulfil their obligations, whether it's a BREEAM assessment, Energy Carbon Reduction or Net Zero.

Appendix D

Main works timeline

Month	Area	Activities	Material	Cut/Fill	Origin	Destination	Photos
Oct-23	RB01	Structure removal	Crush	Cut		Stockpile	231018 buried structure cut RB01.jpg
	RB01	Cut around structures	Site won (Granular)	Cut		RB01	231025 site won cut RB01.jpg
Nov-23	RB02	Structure removal	Crush	Cut		Stockpile	231116 Crush cut RB02.JPG
	Plateau Avenue	Structure removal	Crush	Cut		Stockpile	231130 Crush cut Avenue.JPG
	RB01	Structure backfill	Site won (Granular)	Fill	RB01		231130 Site won Fill RB01.JPG
Dec-23	Plateau Avenue	Red Bank Masonry Wall removal	Crush	Cut		Stockpile	231208 Crush cut Red Bank.JPG
	Riverside Slope	Invasive removal	Contaminated soil	Cut		Off-site disposal	231212 Invasives cut river path.JPG
Jan-24	Riverside Slope	benching for slope reinstatement	site won (Cohesive)	Cut		Various within site	240112 Site won cohesive cut riverside.JPG
	Riverside Slope	Cut for access route	Site won (Granular)	Cut		Red Bank Terrace	240112 Site won cut Riverside slope.JPG
	Plateau Avenue	Red Bank Masonry Wall removal	Crush	Cut		Stockpile	240118 Masonry cut Red Bank Wall.JPEG
	Red Bank Wall	Creamline crane pad	MOT Type 1	Fill	Imported		240118 Type 1 fill creamline.JPG
	Red Bank Terrace	Rubbish removal	Contaminated soil	Cut		Off-site disposal	240122 Waste contam cut RBT.JPG
	Red Bank Terrace	Structre removal	crush	Cut		Stockpile	240123 Masonry cut RBT.JPG
	Red Bank Terrace	Fill to level	Site won (Granular)	Fill	Riverside slope		240123 Site won fill RBT.JPG
	RB01	Fill to level	Site won (Granular)	Fill	RB01		240131 Site won fill RB01.JPG
Feb-24	Red Bank Wall	Wall Foundation	MOT Type 1	Fill	Imported		240201 Type 1 fill RB Wall.JPG
	Plateau Avenue	Structure removal	Crush	Cut		Stockpile	240202 Masonry cut Plateau Ave.JPEG
	Red Bank Terrace	Fill to level	Site won (Granular)	FIll	Riverside slope		240205 Site won fill RBT.JPG
	Red Bank Terrace	Waste removal	Contaminated soil	Cut		Off-site disposal	240207 Waste cut RBT.JPG
	Red Bank Terrace	Asbestos disposal	Contaminated soil	Cut		Off-site disposal	240214 asbestos cut RBT.JPG
	Carriage Shed	Ballast strip	Site won (Granular)	Cut		Carriage shed	240220 Ballast strip cut carriage shed.JPEG
	Gas Works	Structure removal	Crush	Cut		Stockpile	240222 Structure cut Gas Works.JPG
Mar-24	Carriage Shed	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240306 Contam cut Carriage shed.JPG
	Carriage Shed	Masonry removal	Crush	Cut		Stockpile	240306 Masonry Cut Carriage Shed.JPG
	Gas Works	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240307 Contam cut Gas Works.JPG
	Plateau Avenue	Fill to level	Site won (Granular)	Fill	Riverside slope		240308 Site won Fill Avenue.JPG
Apr-24	Carriage Shed	Masonry removal	Crush	Cut		Stockpile	240425 Crush cut carriage shed.JPEG
	Carriage Shed	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240430 Contam cut carriage shed.JPG
May-24	Carriage Shed	Clay removal for re-use	Site won (Cohesive)	Cut		Carriage shed	240501 Cohesive material Cut Carriage Shed.JPG
	Plateau Avenue	Fill to level	Site won (Granular)	FIll	Riverside slope		240501 Site won Fill Plateau Avenue.JPG
	Carriage Shed	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240509 Contam Cut Carriage shed.JPG
	Carriage Shed	Fill to level	2C	Fill	Imported		240510 Cohesive material fill carriage shed.JPG
	Plateau Avenue	Fill to level	Blended fill	Fill	Carriage shed (site won)		240515 Blended Fill fill Avenue.JPG
	Plateau Avenue	Fill to level	Blended fill	Fill	Stockpile (Crush)		240515 Blended Fill fill Avenue.JPG
	RB05c	Cut to level	Site won (Granular)	Cut		Various within site	240517 Site won cut RB05.JPG
	Carriage Shed	Fill to level	Site won (Granular)	Fill	Carriage shed		240520 site won fill carriage shed.JPG
	RB02	Cut to level	Site won (Granular)	Cut		Various within site	240530 Site won cut RB02.JPG
	RB03	Cut to level	Site won (Granular)	Cut		Various within site	240531 Site won cut RB03.JPG
	RB02	Structure removal	Crush	Cut		Stockpile	240531 Structure cut RB02.JPG
Jun-24	RB03	Cut to level	Site won (Granular)	Cut		Various within site	240601 site won cut RB03.JPG
	Carriage Shed	Fill to level	2C	Fill	Imported		240604 Clay fill carriage shed.JPG
	Gas Works	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240614 Cut contam gas works.JPG
	Carriage Shed	Fill to level	Site won (Granular)	Fill	Carriage shed		240625 Site won Fill Carriage Shed.JPG
	Carriage Shed	Fill to level	Blended fill	FIll	RB02/RB03 (site won)		240626 Blended Fill Carriage Shed_Avenue.JPG
	Carriage Shed	Fill to level	Blended fill	FIll	Stockpile (Crush)		240626 Blended Fill Carriage Shed_Avenue.JPG
	Plateau Avenue	Fill to level	Site won (Granular)	Fill	RB02/RB03		240626 Site Won Fill Plateau Avenue.JPG
	Red Bank Wall	Backfill to retaining wall	6N	Fill	Imported		240627 6N Fill Red Bank Wall.JPG
Jul-24	Red Bank Wall	Backfill to retaining wall	6N	Fill	Imported		240701 6N Fill Red Bank Wall.jpg
	RB04	Structure removal	Crush	Cut		Stockpile	240701 Buried Structure Cut RB04.JPG

	Gas Works	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240701 Contam cut gas works.jpg
	Plateau Avenue	Fill to level	Site won (Granular)	Fill	RB02/RB03		240704 Site Won Fill Avenue.JPG
	Carriage Shed	Fill to level	Site won (Granular)	Fill	RB02/RB03		240705 Site won Fill Carriage shed.JPG
	Carriage Shed	Fill to level	2C	Fill	Imported		240710 2C Fill Carriage Shed.JPG
	Carriage Shed	Contamination chase and removal	Contaminated soil	Cut		Off-site disposal	240711 Contam Cut Carriage Shed.JPG
	RB04	Fill to level	Site won (Granular)	Fill	RB02/RB03		240723 Site won fill Rb04.JPG
Aug-24	RB04	Buried waste chase and removal	Contaminated soil	Cut		Off-Site disposal	240801 Contam Cut RB04.JPG
	RB04	Fill to level	Site won (Granular)	Fill	RB02/RB03		240801 Site Won Fill RB04.JPG
	Carriage Shed	Contamination chase and removal	Contaminated soil	Cut		Off-Site disposal	240802 Contam Cut Carriage Shed.JPG
	Carriage Shed	Fill to level	Site won (Granular)	Fill	RB02/RB03		240802 Site Won Fill Carriage Shed.JPG
	Plateau Avenue	Cut to level	Site won (Granular)	Cut			240803 Site Won Cut Creamline.JPG
	RB05c	Fill to level	Site won (Granular)	Fill	RB02/RB03		240803 Site Won Fill RB05c.JPG
	Gas Works	Contamination chase and removal	Contaminated soil	Cut		Off-Site disposal	240805 Contam cut Gas Works.JPG
	RB05a	Fill to level	Site won (Granular)	Fill	RB05a		240805 Site Won Fill RB05a.JPG
	Plateau Avenue	Fill to level	Site won (Granular)	Fill	RB02/RB03		240806 Site Won Fill Avenue.JPG
	Plateau Avenue	Creamline crane pad	MOT Type 1	Fill	Imported		240813 Type 1 Fill Avenue Creamline.JPG
	Plateau Avenue	Capping layer	6F2	Fill	Imported		240821 6F2 Capping Avenue.JPG
Sep-24	RB04	Cut	Site won (Granular)	Cut		Various within site	240903 Site won cut RB04.JPG
	Gas Works	Cut	Contaminated soil	Cut		Off-site disposal	240927 Cut Contam Gas Works.JPG
Oct-24	Gas Works	Fill	1C	Fill	Imported		241015 1C Fill Gas Works.JPG
	Gas Works	Fill	Site won (Granular)	Fill	RB05a		241022 Site Won Fill Gas Works.JPG
	Gas Works	Cut	Contaminated soil	Cut		Off-site disposal	241029 Contam Cut Gasworks.JPG
Nov-24	Gas Works	Fill	1C	Fill	Imported		241129 1C Fill Gas Works.JPG
	TP422/423	Fill	Site won (Granular)	Fill	RB02/3		241129 Site Won Fill TP422423.JPG
Dec-24	TP422/423	Fill	1A Gritstone	Fill	Imported		241211 1A Gritstone Fill TP422 423.JPG
	Red Bank Wall	FIll	6N	Fill	Imported		241211 6N Fill Red Bank Wall.JPG
	Gas Works	Fill	1C	Fill	Imported		241216 1C Fill Gas Works.JPG
Jan-25	Gas Works	Fill	1C	Fill	Imported		250108 1C Fill Gas Works.JPG
	Gas Works	Cut	Contaminated soil	Cut		Off-site disposal	250128 Contam Cut Gasworks.JPG
Feb-25	Gas Works	Cut	Contaminated soil	Cut		Off-site disposal	250203 Contam Cut Gasworks.JPG
	TP422/423	Fill	Lime Stabilised Clay	Fill	Imported		250214 Lime Stabilised Clay Fill TP422-423.JPG
	Gas Works	Fill	2C	Fill	Imported		250221 2C Gas Works Fill.JPG
	TP422/423	Fill	2C	Fill	Imported		250221 2C Gas Works Fill.JPG
	Plateau Avenue	Fill	1A	Fill	Imported		250228 1A Avenue Fill.JPG
Mar-25	Gas Works	Fill	1A	Fill	Imported		250301 1A Fill Gas Works.JPG
	Gas Works	Fill	Site won (Granular)	Fill	RB05a		250304 Site Won Fill Gas Works.JPG
Apr-25	Gas Works	Fill	1C	Fill	Imported		250401 1C Fill Gas Works.JPG
	Gas Works	Fill	Site won (Granular)	Fill	RB05a		250403 Site Won Fill Gas Works.JPG
	Gas Works	Fill	2C	Fill	Imported		250415 2C Fill Gas Works.JPG

Appendix E

Photo records October 2023 to April 2025

231018 buried structure cut RB01

231025 site won cut RB01



231116 Crush cut RB02



11/16/23 13:16

231130 Crush cut Avenue

231130 Site won Fill RB01



231208 Crush cut Red Bank



231212 Invasives cut river path



240112 Site won cohesive cut riverside

240112 Site won cut Riverside slope



240118 Masonry cut Red Bank Wall

240118 Type 1 fill creamline



240122 Waste contam cut RBT



240123 Masonry cut RBT



240123 Site won fill RBT

240131 Site won fill RB01



01/31/24 12:16

240201 Type 1 fill RB Wall

02/01/24 16:17

240202 Masonry cut Plateau Ave



240205 Site won fill RBT

240207 Waste cut RBT



240214 asbestos cut RBT



240220 Ballast strip cut carriage shed

240222 Structure cut Gas Works



240306 Contam cut Carriage shed



240306 Masonry Cut Carriage Shed



240307 Contam cut Gas Works

240308 Site won Fill Avenue

240425 Crush cut carriage shed

240430 Contam cut carriage shed

240501 Cohesive material Cut Carriage Shed



240501 Site won Fill Plateau Avenue



240509 Contam Cut Carriage shed

240510 Cohesive material fill carriage shed



240515 Blended Fill fill Avenue



05/15/24 15:29

240517 Site won cut RB05



240520 site won fill carriage shed

240530 Site won cut RB02

05/30/24 17:51

240531 Site won cut RB03



240531 Structure cut RB02

240601 site won cut RB03



240604 Clay fill carriage shed

240614 Cut contam gas works



240625 Site won Fill Carriage Shed



240626 Blended Fill Carriage Shed_Avenue



240626 Site Won Fill Plateau Avenue



06/26/24 12:09

240627 6N Fill Red Bank Wall

06/27/24 12:45


240701 6N Fill Red Bank Wall

240701 Buried Structure Cut RB04




240701 Contam cut gas works
FLANNERY
flanneryplanthire.com
EX25T332

240704 Site Won Fill Avenue

240705 Site won Fill Carriage shed

07/05/24 12:55

240710 2C Fill Carriage Shed

240711 Contam Cut Carriage Shed

240723 Site won fill Rb04



240801 Contam Cut RB04



240801 Site Won Fill RB04

08/01/24 09:16

240802 Contam Cut Carriage Shed



240802 Site Won Fill Carriage Shed



240803 Site Won Cut Creamline

240803 Site Won Fill RB05c



08/03/24 11:38

240805 Contam cut Gas Works



240805 Site Won Fill RB05a



240806 Site Won Fill Avenue

08/06/24 16:04

240813 Type 1 Fill Avenue Creamline

240821 6F2 Capping Avenue



240903 Site won cut RB04

09/03/24 18:02

240927 Cut Contam Gas Works



241015 1C Fill Gas Works

10/15/24 16:03

241022 Site Won Fill Gas Works

SELWOOD

10/22/24 16:05

241029 Contam Cut Gasworks



241129 1C Fill Gas Works



11/29/24 09:33

241129 Site Won Fill TP422423

241211 1A Gritstone Fill TP422 423



241211 6N Fill Red Bank Wall



241216 1C Fill Gas Works

250108 1C Fill Gas Works

01/08/25 10:44

250128 Contam Cut Gasworks



01/21/25 11:06

250203 Contam Cut Gasworks

02/03/25 09:13

250214 Lime Stabilised Clay Fill TP422-423



250221 2C Gas Works Fill

02/21/25 12:10

250228 1A Avenue Fill



250301 1A Fill Gas Works



250304 Site Won Fill Gas Works

250401 1C Fill Gas Works



250403 Site Won Fill Gas Works



250415 2C Fill Gas Works



Appendix F

Materials management ticket register

Date	Ticket number	Material	Tonnage	Movement
01/01/2023	21212	Non-Hazardous Soils c/w Mixed Waste	20.00	Export
01/01/2023	21213	Non-Hazardous Soils c/w Mixed Waste	20.00	Export
01/01/2023	21216	Non-Hazardous Soils c/w Mixed Waste	18.82	Export
01/01/2023	21218	Non-Hazardous Soils c/w Mixed Waste	20.00	Export
22/05/2023	25933	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
22/05/2023	25937	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
03/06/2023	27755	Hazardous Soils – Elevated Hydrocarbons	19.87	Export
03/06/2023	27756	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
03/06/2023	27757	Hazardous Soils – Elevated Hydrocarbons	20.00	Export
16/10/2023	47119	Hazardous Soils – Elevated Hydrocarbons	20.00	Export
25/10/2023	47300	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
10/11/2023	144106	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144107	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144108	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144109	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144110	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144111	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144112	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144113	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144114	Non-Hazardous 17-05-04	19.00	Export
10/11/2023	144115	Non-Hazardous 17-05-04	19.00	Export
06/12/2023	1359	1A Gritstone	20.00	Import
06/12/2023	1360	1A Gritstone	20.00	Import
06/12/2023	1361	1A Gritstone	20.00	Import
07/12/2023	1352	1A Gritstone	20.19	Import
07/12/2023	1353	1A Gritstone	20.00	Import
07/12/2023	1354	1A Gritstone	20.00	Import
07/12/2023	1355	1A Gritstone	20.00	Import
07/12/2023	1356	1A Gritstone	20.30	Import
07/12/2023	1357	1A Gritstone	20.00	Import
07/12/2023	1358	1A Gritstone	20.06	Import
11/12/2023	1755	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1781	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1782	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1783	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1784	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1785	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1786	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1787	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1788	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1789	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1790	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1791	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1792	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1793	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1794	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1795	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1796	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1797	Soils Containing Himalayan Balsam	19.00	Export
11/12/2023	1798	Soils Containing Himalayan Balsam	19.00	Export

11/12/2023	1799	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1953	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1954	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1955	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1956	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1957	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1958	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1959	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1960	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1961	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1962	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1963	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1964	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1965	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1966	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1967	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1968	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1969	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1970	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1971	Soils Containing Himalayan Balsam	19.00	Export
12/12/2023	1972	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2098	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2099	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2100	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2101	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2102	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2103	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2104	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2105	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2106	Soils Containing Himalayan Balsam	19.00	Export
13/12/2023	2107	Soils Containing Himalayan Balsam	19.00	Export
25/12/2023	44993	1C Fill Material	20.00	Import
25/12/2023	44994	1C Fill Material	19.49	Import
25/12/2023	44995	1C Fill Material	20.00	Import
25/12/2023	44996	1C Fill Material	20.00	Import
25/12/2023	44997	1C Fill Material	18.98	Import
25/12/2023	44998	1C Fill Material	19.87	Import
25/12/2023	44999	1C Fill Material	18.40	Import
25/12/2023	45000	1C Fill Material	20.00	Import
10/01/2024	4440	Mixed Waste off Site	56.20	Export
10/01/2024	4744	Mixed Waste off Site	39.80	Export
12/01/2024	4742	Mixed Waste off Site	72.80	Export
12/01/2024	4743	Mixed Waste off Site	53.80	Export
15/01/2024	4640	1A Gritstone	20.20	Import
15/01/2024	4641	1A Gritstone	20.30	Import
15/01/2024	4642	1A Gritstone	20.20	Import
15/01/2024	4643	1A Gritstone	20.30	Import
15/01/2024	4644	1A Gritstone	20.30	Import
15/01/2024	4645	1A Gritstone	20.24	Import
16/01/2024	5448	MOT Type 1 Limestone	19.46	Import
16/01/2024	5744	MOT Type 1 Limestone	19.60	Import
16/01/2024	5745	MOT Type 1 Limestone	19.82	Import
16/01/2024	5746	MOT Type 1 Limestone	19.60	Import

16/01/2024	5747	MOT Type 1 Limestone	19.68	Import
16/01/2024	5748	MOT Type 1 Limestone	19.86	Import
16/01/2024	5749	MOT Type 1 Limestone	19.70	Import
16/01/2024	5750	MOT Type 1 Limestone	19.74	Import
16/01/2024	5751	MOT Type 1 Limestone	19.68	Import
16/01/2024	5752	MOT Type 1 Limestone	19.50	Import
16/01/2024	5753	MOT Type 1 Limestone	19.58	Import
16/01/2024	5754	MOT Type 1 Limestone	19.66	Import
16/01/2024	5755	MOT Type 1 Limestone	19.68	Import
16/01/2024	5756	MOT Type 1 Limestone	19.60	Import
16/01/2024	5757	MOT Type 1 Limestone	19.68	Import
16/01/2024	5758	MOT Type 1 Limestone	19.74	Import
16/01/2024	5759	MOT Type 1 Limestone	19.40	Import
16/01/2024	5760	MOT Type 1 Limestone	19.62	Import
16/01/2024	5761	MOT Type 1 Limestone	19.64	Import
17/01/2024	5565	1A Gritstone	20.02	Import
17/01/2024	5566	1A Gritstone	20.30	Import
17/01/2024	5567	1A Gritstone	20.30	Import
17/01/2024	5568	1A Gritstone	20.30	Import
17/01/2024	5569	1A Gritstone	20.30	Import
17/01/2024	5570	1A Gritstone	20.40	Import
17/01/2024	5762	MOT Type 1 Limestone	19.60	Import
17/01/2024	5763	MOT Type 1 Limestone	19.58	Import
17/01/2024	5764	MOT Type 1 Limestone	19.40	Import
17/01/2024	5765	MOT Type 1 Limestone	19.60	Import
17/01/2024	5766	MOT Type 1 Limestone	19.60	Import
17/01/2024	5767	MOT Type 1 Limestone	19.62	Import
17/01/2024	5768	MOT Type 1 Limestone	19.50	Import
17/01/2024	5769	MOT Type 1 Limestone	19.66	Import
17/01/2024	5770	MOT Type 1 Limestone	19.66	Import
19/01/2024	6165	MOT Type 1 Limestone	19.48	Import
19/01/2024	6166	MOT Type 1 Limestone	19.56	Import
19/01/2024	6167	MOT Type 1 Limestone	19.78	Import
19/01/2024	6168	MOT Type 1 Limestone	19.48	Import
19/01/2024	6169	MOT Type 1 Limestone	19.96	Import
22/01/2024	5051	Soils Containing Himalayan Balsam	20.40	Export
22/01/2024	5427	Soils Containing Himalayan Balsam	19.50	Export
22/01/2024	5428	Soils Containing Himalayan Balsam	19.62	Export
22/01/2024	5429	Soils Containing Himalayan Balsam	19.72	Export
22/01/2024	5430	Soils Containing Himalayan Balsam	19.86	Export
22/01/2024	5431	Soils Containing Himalayan Balsam	18.90	Export
22/01/2024	5432	Soils Containing Himalayan Balsam	18.98	Export
22/01/2024	5433	Soils Containing Himalayan Balsam	19.70	Export
22/01/2024	5434	Soils Containing Himalayan Balsam	19.00	Export
22/01/2024	5435	Soils Containing Himalayan Balsam	19.64	Export
22/01/2024	5436	Soils Containing Himalayan Balsam	19.80	Export
22/01/2024	5437	Soils Containing Himalayan Balsam	19.70	Export
22/01/2024	5438	Soils Containing Himalayan Balsam	19.92	Export
22/01/2024	5439	Soils Containing Himalayan Balsam	19.74	Export
22/01/2024	5440	Soils Containing Himalayan Balsam	19.86	Export
22/01/2024	5441	Soils Containing Himalayan Balsam	19.64	Export
22/01/2024	5442	Soils Containing Himalayan Balsam	19.60	Export
22/01/2024	5443	Soils Containing Himalayan Balsam	19.80	Export

22/01/2024	5444	Soils Containing Himalayan Balsam	20.54	Export
22/01/2024	5445	Soils Containing Himalayan Balsam	19.96	Export
22/01/2024	6171	1A Gritstone	20.30	Import
22/01/2024	6172	1A Gritstone	20.30	Import
22/01/2024	6173	1A Gritstone	20.30	Import
22/01/2024	6174	1A Gritstone	20.20	Import
22/01/2024	6175	1A Gritstone	20.14	Import
22/01/2024	6176	1A Gritstone	20.40	Import
22/01/2024	6427	MOT Type 1 Limestone	19.52	Import
22/01/2024	6428	MOT Type 1 Limestone	19.62	Import
22/01/2024	6429	MOT Type 1 Limestone	19.76	Import
22/01/2024	6430	MOT Type 1 Limestone	19.82	Import
22/01/2024	6431	MOT Type 1 Limestone	19.68	Import
22/01/2024	6432	MOT Type 1 Limestone	19.70	Import
22/01/2024	6433	MOT Type 1 Limestone	19.40	Import
22/01/2024	6434	MOT Type 1 Limestone	19.56	Import
22/01/2024	6435	MOT Type 1 Limestone	19.68	Import
22/01/2024	6436	MOT Type 1 Limestone	19.56	Import
22/01/2024	6867	Soils Containing Himalayan Balsam	19.77	Export
22/01/2024	6868	Soils Containing Himalayan Balsam	19.90	Export
22/01/2024	6957	MOT Type 1 Limestone	19.70	Import
22/01/2024	6958	MOT Type 1 Limestone	19.52	Import
22/01/2024	6959	MOT Type 1 Limestone	19.42	Import
22/01/2024	6961	MOT Type 1 Limestone	19.28	Import
23/01/2024	6849	Soils Containing Himalayan Balsam	20.70	Export
23/01/2024	6850	Soils Containing Himalayan Balsam	19.22	Export
23/01/2024	6851	Soils Containing Himalayan Balsam	19.84	Export
23/01/2024	6852	Soils Containing Himalayan Balsam	20.54	Export
23/01/2024	6853	Soils Containing Himalayan Balsam	20.62	Export
23/01/2024	6854	Soils Containing Himalayan Balsam	20.74	Export
23/01/2024	6855	Soils Containing Himalayan Balsam	20.10	Export
23/01/2024	6856	Soils Containing Himalayan Balsam	18.94	Export
23/01/2024	6857	Soils Containing Himalayan Balsam	19.36	Export
23/01/2024	6858	Soils Containing Himalayan Balsam	19.72	Export
23/01/2024	6859	Soils Containing Himalayan Balsam	20.76	Export
23/01/2024	6860	Soils Containing Himalayan Balsam	19.90	Export
23/01/2024	6861	Soils Containing Himalayan Balsam	19.46	Export
23/01/2024	6862	Soils Containing Himalayan Balsam	19.85	Export
23/01/2024	6864	Soils Containing Himalayan Balsam	19.50	Export
23/01/2024	6865	Soils Containing Himalayan Balsam	19.10	Export
23/01/2024	6866	Soils Containing Himalayan Balsam	20.38	Export
23/01/2024	6960	MOT Type 1 Limestone	19.50	Import
25/01/2024	7479	Soils Containing Himalayan Balsam	19.70	Export
25/01/2024	7480	Soils Containing Himalayan Balsam	19.86	Export
25/01/2024	7481	Soils Containing Himalayan Balsam	19.22	Export
25/01/2024	7482	Soils Containing Himalayan Balsam	19.40	Export
25/01/2024	7483	Soils Containing Himalayan Balsam	19.70	Export
25/01/2024	7485	Soils Containing Himalayan Balsam	20.40	Export
25/01/2024	7486	Soils Containing Himalayan Balsam	20.06	Export
25/01/2024	7487	Soils Containing Himalayan Balsam	20.38	Export
25/01/2024	7488	Soils Containing Himalayan Balsam	19.70	Export
25/01/2024	7490	Soils Containing Himalayan Balsam	19.72	Export
25/01/2024	7491	Soils Containing Himalayan Balsam	19.44	Export

25/01/2024	7492	Soils Containing Himalayan Balsam	19.26	Export
25/01/2024	7493	Soils Containing Himalayan Balsam	19.70	Export
25/01/2024	7495	Soils Containing Himalayan Balsam	20.16	Export
25/01/2024	7496	Soils Containing Himalayan Balsam	19.56	Export
25/01/2024	7497	Soils Containing Himalayan Balsam	19.28	Export
25/01/2024	7498	Soils Containing Himalayan Balsam	19.24	Export
26/01/2024	7727	Soils Containing Himalayan Balsam	19.76	Export
26/01/2024	7728	Soils Containing Himalayan Balsam	19.62	Export
26/01/2024	7729	Soils Containing Himalayan Balsam	18.72	Export
26/01/2024	7734	Soils Containing Himalayan Balsam	19.70	Export
26/01/2024	7735	Soils Containing Himalayan Balsam	19.54	Export
26/01/2024	7736	Soils Containing Himalayan Balsam	19.98	Export
26/01/2024	7737	Soils Containing Himalayan Balsam	19.80	Export
26/01/2024	7738	Soils Containing Himalayan Balsam	20.20	Export
26/01/2024	7739	Soils Containing Himalayan Balsam	20.10	Export
26/01/2024	7740	Soils Containing Himalayan Balsam	19.66	Export
26/01/2024	7741	Soils Containing Himalayan Balsam	19.80	Export
26/01/2024	7742	Soils Containing Himalayan Balsam	19.90	Export
26/01/2024	7743	Soils Containing Himalayan Balsam	20.02	Export
26/01/2024	7744	Soils Containing Himalayan Balsam	18.88	Export
26/01/2024	7745	Soils Containing Himalayan Balsam	20.00	Export
26/01/2024	7746	Soils Containing Himalayan Balsam	19.60	Export
26/01/2024	7747	Soils Containing Himalayan Balsam	19.26	Export
26/01/2024	7748	Soils Containing Himalayan Balsam	19.58	Export
26/01/2024	7749	Soils Containing Himalayan Balsam	19.96	Export
29/01/2024	7623	2C Fill Material	18.14	Import
29/01/2024	7624	2C Fill Material	20.00	Import
29/01/2024	7625	2C Fill Material	20.00	Import
29/01/2024	7626	2C Fill Material	18.04	Import
29/01/2024	7627	2C Fill Material	18.96	Import
29/01/2024	7628	2C Fill Material	19.76	Import
29/01/2024	7629	2C Fill Material	19.04	Import
29/01/2024	7630	2C Fill Material	18.36	Import
29/01/2024	7631	2C Fill Material	18.82	Import
29/01/2024	7632	2C Fill Material	18.74	Import
08/02/2024	10245	Soils Containing Himalayan Balsam	19.52	Export
08/02/2024	10246	Soils Containing Himalayan Balsam	19.50	Export
08/02/2024	10247	Soils Containing Himalayan Balsam	19.61	Export
08/02/2024	10248	Soils Containing Himalayan Balsam	19.64	Export
08/02/2024	10249	Soils Containing Himalayan Balsam	20.00	Export
08/02/2024	10250	Soils Containing Himalayan Balsam	20.08	Export
08/02/2024	10251	Soils Containing Himalayan Balsam	19.78	Export
08/02/2024	10252	Soils Containing Himalayan Balsam	19.98	Export
08/02/2024	10253	Soils Containing Himalayan Balsam	19.92	Export
08/02/2024	10254	Soils Containing Himalayan Balsam	19.86	Export
08/02/2024	10255	Soils Containing Himalayan Balsam	20.52	Export
08/02/2024	10256	Soils Containing Himalayan Balsam	19.92	Export
08/02/2024	10257	Soils Containing Himalayan Balsam	20.52	Export
08/02/2024	10258	Soils Containing Himalayan Balsam	19.90	Export
08/02/2024	10259	Soils Containing Himalayan Balsam	20.00	Export
08/02/2024	10260	Soils Containing Himalayan Balsam	18.50	Export
08/02/2024	10261	Soils Containing Himalayan Balsam	20.16	Export
08/02/2024	10262	Soils Containing Himalayan Balsam	19.64	Export

08/02/2024	10263	Soils Containing Himalayan Balsam	18.74	Export
08/02/2024	10264	Soils Containing Himalayan Balsam	19.28	Export
09/02/2024	10265	Soils Containing Himalayan Balsam	19.64	Export
09/02/2024	10269	Soils Containing Himalayan Balsam	19.85	Export
09/02/2024	10270	Soils Containing Himalayan Balsam	20.30	Export
09/02/2024	10271	Soils Containing Himalayan Balsam	19.40	Export
09/02/2024	10272	Soils Containing Himalayan Balsam	19.74	Export
09/02/2024	10273	Soils Containing Himalayan Balsam	19.63	Export
09/02/2024	10274	Soils Containing Himalayan Balsam	19.82	Export
09/02/2024	10275	Soils Containing Himalayan Balsam	19.64	Export
09/02/2024	10276	Soils Containing Himalayan Balsam	20.78	Export
09/02/2024	10277	Soils Containing Himalayan Balsam	19.52	Export
09/02/2024	10278	Soils Containing Himalayan Balsam	19.50	Export
09/02/2024	10279	Soils Containing Himalayan Balsam	19.46	Export
09/02/2024	10280	Soils Containing Himalayan Balsam	19.28	Export
09/02/2024	10281	Soils Containing Himalayan Balsam	20.40	Export
09/02/2024	10282	Soils Containing Himalayan Balsam	19.96	Export
09/02/2024	10283	Soils Containing Himalayan Balsam	20.58	Export
09/02/2024	10284	Soils Containing Himalayan Balsam	20.16	Export
09/02/2024	10285	Soils Containing Himalayan Balsam	18.80	Export
09/02/2024	10286	Soils Containing Himalayan Balsam	20.02	Export
09/02/2024	10287	Soils Containing Himalayan Balsam	19.02	Export
12/02/2024	10559	Soils Containing Himalayan Balsam	20.35	Export
12/02/2024	10560	Soils Containing Himalayan Balsam	20.10	Export
12/02/2024	10561	Soils Containing Himalayan Balsam	19.40	Export
12/02/2024	10563	Soils Containing Himalayan Balsam	19.60	Export
12/02/2024	10564	Soils Containing Himalayan Balsam	19.78	Export
12/02/2024	10565	Soils Containing Himalayan Balsam	19.92	Export
12/02/2024	10567	Soils Containing Himalayan Balsam	19.62	Export
12/02/2024	10568	Soils Containing Himalayan Balsam	19.56	Export
12/02/2024	10569	Soils Containing Himalayan Balsam	19.50	Export
12/02/2024	10570	Soils Containing Himalayan Balsam	19.74	Export
12/02/2024	10571	Soils Containing Himalayan Balsam	19.98	Export
12/02/2024	10572	Soils Containing Himalayan Balsam	20.38	Export
12/02/2024	10573	Soils Containing Himalayan Balsam	20.04	Export
12/02/2024	10574	Soils Containing Himalayan Balsam	19.76	Export
12/02/2024	10575	Soils Containing Himalayan Balsam	20.16	Export
12/02/2024	10576	Soils Containing Himalayan Balsam	20.90	Export
12/02/2024	10577	Soils Containing Himalayan Balsam	18.88	Export
12/02/2024	10578	Soils Containing Himalayan Balsam	19.26	Export
13/02/2024	10621	Soils Containing Himalayan Balsam	19.89	Export
13/02/2024	10622	Soils Containing Himalayan Balsam	19.87	Export
13/02/2024	10623	Soils Containing Himalayan Balsam	19.74	Export
13/02/2024	10624	Soils Containing Himalayan Balsam	19.66	Export
13/02/2024	10625	Soils Containing Himalayan Balsam	20.00	Export
13/02/2024	10626	Soils Containing Himalayan Balsam	19.59	Export
13/02/2024	10627	Soils Containing Himalayan Balsam	19.97	Export
13/02/2024	10628	Soils Containing Himalayan Balsam	19.85	Export
13/02/2024	10629	Soils Containing Himalayan Balsam	19.48	Export
13/02/2024	10630	Soils Containing Himalayan Balsam	19.24	Export
13/02/2024	10631	Soils Containing Himalayan Balsam	19.36	Export
13/02/2024	10632	Soils Containing Himalayan Balsam	19.22	Export
13/02/2024	10633	Soils Containing Himalayan Balsam	19.90	Export

13/02/2024	10634	Soils Containing Himalayan Balsam	19.52	Export
13/02/2024	10635	Soils Containing Himalayan Balsam	20.68	Export
13/02/2024	10636	Soils Containing Himalayan Balsam	19.88	Export
13/02/2024	10637	Soils Containing Himalayan Balsam	20.38	Export
13/02/2024	10638	Soils Containing Himalayan Balsam	19.60	Export
13/02/2024	10639	Soils Containing Himalayan Balsam	20.32	Export
13/02/2024	10640	Soils Containing Himalayan Balsam	19.50	Export
14/02/2024	10801	Soils Containing Himalayan Balsam	19.90	Export
14/02/2024	10802	Soils Containing Himalayan Balsam	19.95	Export
14/02/2024	10803	Soils Containing Himalayan Balsam	19.90	Export
14/02/2024	10804	Soils Containing Himalayan Balsam	19.92	Export
14/02/2024	10805	Soils Containing Himalayan Balsam	19.89	Export
14/02/2024	10806	Soils Containing Himalayan Balsam	19.78	Export
14/02/2024	10807	Soils Containing Himalayan Balsam	20.00	Export
14/02/2024	10809	Soils Containing Himalayan Balsam	19.78	Export
14/02/2024	10810	Soils Containing Himalayan Balsam	19.96	Export
14/02/2024	10811	Soils Containing Himalayan Balsam	19.50	Export
14/02/2024	10812	Soils Containing Himalayan Balsam	19.28	Export
14/02/2024	10813	Soils Containing Himalayan Balsam	19.40	Export
14/02/2024	10814	Soils Containing Himalayan Balsam	19.88	Export
14/02/2024	10815	Soils Containing Himalayan Balsam	20.02	Export
14/02/2024	10816	Soils Containing Himalayan Balsam	20.06	Export
14/02/2024	10817	Soils Containing Himalayan Balsam	19.98	Export
14/02/2024	10818	Soils Containing Himalayan Balsam	18.88	Export
14/02/2024	10819	Soils Containing Himalayan Balsam	19.30	Export
14/02/2024	10820	Soils Containing Himalayan Balsam	19.70	Export
15/02/2024	11021	Soils Containing Himalayan Balsam	19.98	Export
15/02/2024	11022	Soils Containing Himalayan Balsam	20.00	Export
15/02/2024	11025	Soils Containing Himalayan Balsam	19.90	Export
15/02/2024	11026	Soils Containing Himalayan Balsam	19.95	Export
15/02/2024	11029	Soils Containing Himalayan Balsam	19.10	Export
15/02/2024	11030	Soils Containing Himalayan Balsam	19.90	Export
15/02/2024	11031	Soils Containing Himalayan Balsam	20.20	Export
15/02/2024	11033	Soils Containing Himalayan Balsam	19.34	Export
15/02/2024	11034	Soils Containing Himalayan Balsam	20.36	Export
15/02/2024	11037	Soils Containing Himalayan Balsam	20.14	Export
15/02/2024	11038	Soils Containing Himalayan Balsam	18.88	Export
19/02/2024	11278	MOT Type 1 Gritstone	20.00	Import
19/02/2024	11279	MOT Type 1 Gritstone	20.00	Import
19/02/2024	11280	MOT Type 1 Gritstone	20.50	Import
23/02/2024	12312	MOT Type 1 Limestone	19.50	Import
23/02/2024	12313	MOT Type 1 Gritstone	19.82	Import
23/02/2024	12314	MOT Type 1 Gritstone	20.20	Import
23/02/2024	12315	MOT Type 1 Gritstone	19.50	Import
23/02/2024	12316	MOT Type 1 Gritstone	20.00	Import
23/02/2024	12317	MOT Type 1 Gritstone	20.50	Import
26/02/2024	12318	2C Fill Material	20.00	Import
26/02/2024	12370	2C Fill Material	20.00	Import
26/02/2024	12371	2C Fill Material	20.00	Import
26/02/2024	12372	2C Fill Material	20.00	Import
26/02/2024	12373	2C Fill Material	20.00	Import
26/02/2024	12374	2C Fill Material	20.00	Import
26/02/2024	12375	2C Fill Material	20.00	Import

26/02/2024	12376	2C Fill Material	20.00	Import
26/02/2024	12377	2C Fill Material	20.00	Import
26/02/2024	12378	2C Fill Material	20.00	Import
26/02/2024	12379	2C Fill Material	20.00	Import
26/02/2024	12380	2C Fill Material	20.00	Import
26/02/2024	12381	2C Fill Material	20.00	Import
26/02/2024	12382	2C Fill Material	20.00	Import
26/02/2024	12383	2C Fill Material	20.00	Import
11/03/2024	15536	150/75mm Clean Gritstone	20.44	Import
11/03/2024	15537	150/75mm Clean Gritstone	19.70	Import
26/03/2024	18550	Hazardous Soils c/w Asbestos & Metals	20.16	Export
26/03/2024	18551	Hazardous Soils c/w Asbestos & Metals	19.84	Export
27/03/2024	18548	Hazardous Soils c/w Asbestos & Metals	19.67	Export
27/03/2024	18549	Hazardous Soils c/w Asbestos & Metals	18.19	Export
27/03/2024	18552	Hazardous Soils c/w Asbestos & Metals	20.05	Export
27/03/2024	18553	Hazardous Soils c/w Asbestos & Metals	19.68	Export
27/03/2024	18556	Hazardous Soils c/w Asbestos & Metals	19.68	Export
27/03/2024	18567	Hazardous Soils c/w Asbestos & Metals	19.49	Export
28/03/2024	18554	Hazardous Soils c/w Asbestos & Metals	19.78	Export
28/03/2024	18555	Hazardous Soils c/w Asbestos & Metals	19.52	Export
28/03/2024	18557	Hazardous Soils c/w Asbestos & Metals	19.24	Export
28/03/2024	18558	Hazardous Soils c/w Asbestos & Metals	19.15	Export
28/03/2024	18559	Hazardous Soils c/w Asbestos & Metals	19.33	Export
28/03/2024	18560	Hazardous Soils c/w Asbestos & Metals	19.72	Export
28/03/2024	18562	Hazardous Soils c/w Asbestos & Metals	18.00	Export
28/03/2024	18563	Hazardous Soils c/w Asbestos & Metals	18.00	Export
28/03/2024	18565	Hazardous Soils c/w Asbestos & Metals	19.33	Export
15/04/2024	20967	Non-Hazardous Soils c/w Mixed Waste	18.86	Export
15/04/2024	21067	Non-Hazardous Soils c/w Mixed Waste	18.30	Export
15/04/2024	21068	Non-Hazardous Soils c/w Mixed Waste	18.70	Export
15/04/2024	21069	Non-Hazardous Soils c/w Mixed Waste	18.96	Export
15/04/2024	21070	Non-Hazardous Soils c/w Mixed Waste	18.88	Export
15/04/2024	21146	Non-Hazardous Soils c/w Mixed Waste	19.32	Export
15/04/2024	21147	Non-Hazardous Soils c/w Mixed Waste	18.26	Export
15/04/2024	21148	Non-Hazardous Soils c/w Mixed Waste	18.58	Export
15/04/2024	21159	Non-Hazardous Soils c/w Mixed Waste	19.38	Export
15/04/2024	21160	Non-Hazardous Soils c/w Mixed Waste	19.70	Export
16/04/2024	21149	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
16/04/2024	21150	Non-Hazardous Soils c/w Mixed Waste	18.94	Export
16/04/2024	21151	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
16/04/2024	21152	Non-Hazardous Soils c/w Mixed Waste	19.28	Export
16/04/2024	21153	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
16/04/2024	21158	Non-Hazardous Soils c/w Mixed Waste	19.84	Export
16/04/2024	21161	Non-Hazardous Soils c/w Mixed Waste	19.54	Export
16/04/2024	21162	Non-Hazardous Soils c/w Mixed Waste	19.26	Export
16/04/2024	21163	Non-Hazardous Soils c/w Mixed Waste	19.06	Export
16/04/2024	21164	Non-Hazardous Soils c/w Mixed Waste	18.72	Export
16/04/2024	21165	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
16/04/2024	21167	Non-Hazardous Soils c/w Mixed Waste	18.72	Export
16/04/2024	21168	Non-Hazardous Soils c/w Mixed Waste	19.76	Export
16/04/2024	21169	Non-Hazardous Soils c/w Mixed Waste	18.78	Export
16/04/2024	21171	Non-Hazardous Soils c/w Mixed Waste	19.20	Export
16/04/2024	21174	Non-Hazardous Soils c/w Mixed Waste	18.58	Export

17/04/2024	21154	Non-Hazardous Soils c/w Mixed Waste	19.08	Export
17/04/2024	21155	Non-Hazardous Soils c/w Mixed Waste	19.10	Export
17/04/2024	21156	Non-Hazardous Soils c/w Mixed Waste	19.06	Export
17/04/2024	21157	Non-Hazardous Soils c/w Mixed Waste	18.74	Export
17/04/2024	21166	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
17/04/2024	21180	Non-Hazardous Soils c/w Mixed Waste	18.96	Export
17/04/2024	21181	Non-Hazardous Soils c/w Mixed Waste	19.16	Export
17/04/2024	21182	Non-Hazardous Soils c/w Mixed Waste	19.54	Export
17/04/2024	21183	Non-Hazardous Soils c/w Mixed Waste	18.36	Export
17/04/2024	21184	Non-Hazardous Soils c/w Mixed Waste	19.42	Export
17/04/2024	21186	Non-Hazardous Soils c/w Mixed Waste	18.82	Export
17/04/2024	21188	Non-Hazardous Soils c/w Mixed Waste	18.98	Export
18/04/2024	21170	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
18/04/2024	21172	Non-Hazardous Soils c/w Mixed Waste	19.14	Export
18/04/2024	21173	Non-Hazardous Soils c/w Mixed Waste	18.88	Export
18/04/2024	21175	Non-Hazardous Soils c/w Mixed Waste	19.86	Export
18/04/2024	21176	Non-Hazardous Soils c/w Mixed Waste	19.66	Export
18/04/2024	21177	Non-Hazardous Soils c/w Mixed Waste	19.00	Export
18/04/2024	21178	Non-Hazardous Soils c/w Mixed Waste	20.50	Export
18/04/2024	21179	Non-Hazardous Soils c/w Mixed Waste	18.60	Export
18/04/2024	21185	Non-Hazardous Soils c/w Mixed Waste	19.98	Export
18/04/2024	21187	Non-Hazardous Soils c/w Mixed Waste	19.18	Export
18/04/2024	21189	Non-Hazardous Soils c/w Mixed Waste	19.38	Export
18/04/2024	21190	Non-Hazardous Soils c/w Mixed Waste	19.64	Export
18/04/2024	21191	Non-Hazardous Soils c/w Mixed Waste	20.16	Export
18/04/2024	21192	Non-Hazardous Soils c/w Mixed Waste	19.76	Export
18/04/2024	21193	Non-Hazardous Soils c/w Mixed Waste	18.38	Export
18/04/2024	21201	Non-Hazardous Soils c/w Mixed Waste	18.48	Export
18/04/2024	21202	Non-Hazardous Soils c/w Mixed Waste	18.64	Export
18/04/2024	21203	Non-Hazardous Soils c/w Mixed Waste	19.82	Export
18/04/2024	21204	Non-Hazardous Soils c/w Mixed Waste	18.70	Export
19/04/2024	21194	Non-Hazardous Soils c/w Mixed Waste	19.80	Export
19/04/2024	21195	Non-Hazardous Soils c/w Mixed Waste	19.96	Export
19/04/2024	21196	Non-Hazardous Soils c/w Mixed Waste	18.26	Export
19/04/2024	21197	Non-Hazardous Soils c/w Mixed Waste	18.42	Export
19/04/2024	21198	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
19/04/2024	21199	Non-Hazardous Soils c/w Mixed Waste	19.94	Export
19/04/2024	21200	Non-Hazardous Soils c/w Mixed Waste	19.20	Export
19/04/2024	21205	Non-Hazardous Soils c/w Mixed Waste	18.60	Export
19/04/2024	21208	Non-Hazardous Soils c/w Mixed Waste	18.92	Export
19/04/2024	21220	Non-Hazardous Soils c/w Mixed Waste	20.50	Export
19/04/2024	21221	Non-Hazardous Soils c/w Mixed Waste	18.34	Export
19/04/2024	21222	Non-Hazardous Soils c/w Mixed Waste	18.56	Export
19/04/2024	21223	Non-Hazardous Soils c/w Mixed Waste	18.70	Export
19/04/2024	21224	Non-Hazardous Soils c/w Mixed Waste	20.24	Export
19/04/2024	21225	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
19/04/2024	21226	Non-Hazardous Soils c/w Mixed Waste	18.16	Export
19/04/2024	21227	Non-Hazardous Soils c/w Mixed Waste	18.66	Export
19/04/2024	21228	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
19/04/2024	21229	Non-Hazardous Soils c/w Mixed Waste	19.16	Export
19/04/2024	21230	Non-Hazardous Soils c/w Mixed Waste	19.10	Export
19/04/2024	21231	Non-Hazardous Soils c/w Mixed Waste	18.92	Export
19/04/2024	21232	Non-Hazardous Soils c/w Mixed Waste	20.02	Export

19/04/2024	21233	Non-Hazardous Soils c/w Mixed Waste	18.70	Export
19/04/2024	21234	Non-Hazardous Soils c/w Mixed Waste	18.68	Export
22/04/2024	21206	Non-Hazardous Soils c/w Mixed Waste	19.00	Export
22/04/2024	21207	Non-Hazardous Soils c/w Mixed Waste	19.72	Export
22/04/2024	21209	Non-Hazardous Soils c/w Mixed Waste	18.76	Export
22/04/2024	21210	Non-Hazardous Soils c/w Mixed Waste	19.16	Export
22/04/2024	21211	Non-Hazardous Soils c/w Mixed Waste	20.70	Export
22/04/2024	21214	Non-Hazardous Soils c/w Mixed Waste	19.02	Export
22/04/2024	21215	Non-Hazardous Soils c/w Mixed Waste	18.38	Export
22/04/2024	21217	Non-Hazardous Soils c/w Mixed Waste	19.34	Export
22/04/2024	21219	Non-Hazardous Soils c/w Mixed Waste	20.10	Export
22/04/2024	21235	Non-Hazardous Soils c/w Mixed Waste	19.38	Export
22/04/2024	21236	Non-Hazardous Soils c/w Mixed Waste	18.86	Export
22/04/2024	21237	Non-Hazardous Soils c/w Mixed Waste	19.00	Export
22/04/2024	21238	Non-Hazardous Soils c/w Mixed Waste	19.04	Export
22/04/2024	21239	Non-Hazardous Soils c/w Mixed Waste	18.56	Export
22/04/2024	21240	Non-Hazardous Soils c/w Mixed Waste	18.56	Export
22/04/2024	22236	Non-Hazardous Soils c/w Mixed Waste	18.86	Export
23/04/2024	22237	Non-Hazardous Soils c/w Mixed Waste	18.40	Export
23/04/2024	22238	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
23/04/2024	22239	Non-Hazardous Soils c/w Mixed Waste	18.22	Export
23/04/2024	22240	Non-Hazardous Soils c/w Mixed Waste	18.40	Export
23/04/2024	22241	Non-Hazardous Soils c/w Mixed Waste	19.30	Export
23/04/2024	22242	Non-Hazardous Soils c/w Mixed Waste	19.10	Export
23/04/2024	22243	Non-Hazardous Soils c/w Mixed Waste	19.36	Export
23/04/2024	22244	Non-Hazardous Soils c/w Mixed Waste	18.94	Export
23/04/2024	22245	Non-Hazardous Soils c/w Mixed Waste	19.62	Export
23/04/2024	22246	Non-Hazardous Soils c/w Mixed Waste	19.20	Export
23/04/2024	22247	Non-Hazardous Soils c/w Mixed Waste	19.64	Export
23/04/2024	22248	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
23/04/2024	22249	Non-Hazardous Soils c/w Mixed Waste	18.04	Export
23/04/2024	22250	Non-Hazardous Soils c/w Mixed Waste	18.20	Export
23/04/2024	22251	Non-Hazardous Soils c/w Mixed Waste	19.10	Export
23/04/2024	22254	Non-Hazardous Soils c/w Mixed Waste	18.84	Export
23/04/2024	22260	Non-Hazardous Soils c/w Mixed Waste	18.74	Export
23/04/2024	22261	Non-Hazardous Soils c/w Mixed Waste	18.30	Export
24/04/2024	22252	Non-Hazardous Soils c/w Mixed Waste	18.58	Export
24/04/2024	22253	Non-Hazardous Soils c/w Mixed Waste	19.30	Export
24/04/2024	22255	Non-Hazardous Soils c/w Mixed Waste	18.76	Export
24/04/2024	22256	Non-Hazardous Soils c/w Mixed Waste	18.46	Export
24/04/2024	22257	Non-Hazardous Soils c/w Mixed Waste	19.02	Export
24/04/2024	22258	Non-Hazardous Soils c/w Mixed Waste	19.08	Export
24/04/2024	22259	Non-Hazardous Soils c/w Mixed Waste	18.68	Export
24/04/2024	22262	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
24/04/2024	22263	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
24/04/2024	22264	Non-Hazardous Soils c/w Mixed Waste	18.28	Export
24/04/2024	22265	Non-Hazardous Soils c/w Mixed Waste	18.00	Export
24/04/2024	22543	Non-Hazardous Soils c/w Mixed Waste	22.88	Export
25/04/2024	22544	Non-Hazardous Soils c/w Mixed Waste	20.12	Export
25/04/2024	22545	Non-Hazardous Soils c/w Mixed Waste	19.30	Export
07/05/2024	23871	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
07/05/2024	23902	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
07/05/2024	23903	Hazardous Soils – Elevated Hydrocarbons	18.20	Export

07/05/2024	23904	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
07/05/2024	23905	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
07/05/2024	23906	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
07/05/2024	23907	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
07/05/2024	23908	Hazardous Soils – Elevated Hydrocarbons	20.38	Export
07/05/2024	23909	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
07/05/2024	23910	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
07/05/2024	23911	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
07/05/2024	23912	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
07/05/2024	23913	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
07/05/2024	23914	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
07/05/2024	23915	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
07/05/2024	23916	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
07/05/2024	23917	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
07/05/2024	23918	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
07/05/2024	23919	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
07/05/2024	23920	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
07/05/2024	23921	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
07/05/2024	23922	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
07/05/2024	23923	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
07/05/2024	23924	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
07/05/2024	23975	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
08/05/2024	23976	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
08/05/2024	23977	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
08/05/2024	23978	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
08/05/2024	23979	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
08/05/2024	23980	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
08/05/2024	23981	Hazardous Soils – Elevated Hydrocarbons	19.88	Export
08/05/2024	23983	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
08/05/2024	23984	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
08/05/2024	23986	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
08/05/2024	23987	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
08/05/2024	23989	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
08/05/2024	23990	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
08/05/2024	23991	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
08/05/2024	23992	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
08/05/2024	23993	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
08/05/2024	23994	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
08/05/2024	23995	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
08/05/2024	23997	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
09/05/2024	23982	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
09/05/2024	23985	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
09/05/2024	23988	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
09/05/2024	23996	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
09/05/2024	23998	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
09/05/2024	24197	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
09/05/2024	24199	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
09/05/2024	24200	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
09/05/2024	24201	Hazardous Soils – Elevated Hydrocarbons	20.00	Export
09/05/2024	24202	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
09/05/2024	24203	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
09/05/2024	24204	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
09/05/2024	24205	Hazardous Soils – Elevated Hydrocarbons	19.04	Export

09/05/2024	24206	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
09/05/2024	24207	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
09/05/2024	24213	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
09/05/2024	24214	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
09/05/2024	24215	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
10/05/2024	24198	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
10/05/2024	24208	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
10/05/2024	24209	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
10/05/2024	24210	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
10/05/2024	24211	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
10/05/2024	24212	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
10/05/2024	24347	150/75mm Clean Gritstone	19.20	Import
10/05/2024	24348	150/75mm Clean Gritstone	19.96	Import
10/05/2024	24349	150/75mm Clean Gritstone	20.22	Import
10/05/2024	24350	150/75mm Clean Gritstone	19.36	Import
10/05/2024	24449	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
10/05/2024	24450	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
10/05/2024	24451	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
10/05/2024	24452	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
10/05/2024	24453	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
10/05/2024	24454	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
10/05/2024	24455	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
10/05/2024	24456	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
10/05/2024	24457	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
10/05/2024	24458	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
10/05/2024	24459	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
10/05/2024	24460	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
10/05/2024	24461	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
10/05/2024	24462	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
10/05/2024	24463	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
10/05/2024	24464	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
13/05/2024	24216	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
13/05/2024	24217	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
13/05/2024	24218	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
13/05/2024	24219	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
13/05/2024	24220	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
13/05/2024	24351	1C Fill Material	20.30	Import
13/05/2024	24361	1C Fill Material	19.80	Import
13/05/2024	24362	1C Fill Material	20.20	Import
13/05/2024	24363	1C Fill Material	20.20	Import
13/05/2024	24651	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
13/05/2024	24652	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
13/05/2024	24653	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
13/05/2024	24654	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
13/05/2024	24655	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
13/05/2024	24656	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
13/05/2024	24657	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
13/05/2024	24658	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
13/05/2024	24659	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
13/05/2024	24660	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
13/05/2024	24661	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
13/05/2024	24662	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
13/05/2024	24663	Hazardous Soils – Elevated Hydrocarbons	18.00	Export

13/05/2024	24664	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
13/05/2024	24665	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
13/05/2024	24666	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
13/05/2024	24667	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
13/05/2024	24668	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
13/05/2024	24670	Hazardous Soils – Elevated Hydrocarbons	19.98	Export
13/05/2024	24671	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
13/05/2024	24672	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
13/05/2024	24673	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
14/05/2024	24669	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
14/05/2024	24674	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
14/05/2024	24800	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
14/05/2024	24801	Hazardous Soils – Elevated Hydrocarbons	20.10	Export
14/05/2024	24802	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
14/05/2024	24803	Hazardous Soils – Elevated Hydrocarbons	20.06	Export
14/05/2024	24804	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
14/05/2024	24805	Hazardous Soils – Elevated Hydrocarbons	19.75	Export
14/05/2024	24806	Hazardous Soils – Elevated Hydrocarbons	20.08	Export
14/05/2024	24807	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
14/05/2024	24808	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
14/05/2024	24809	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
14/05/2024	24811	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
14/05/2024	24812	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
14/05/2024	24813	Hazardous Soils – Elevated Hydrocarbons	19.98	Export
14/05/2024	24814	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
14/05/2024	24815	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
14/05/2024	24816	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
14/05/2024	24817	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
14/05/2024	24818	Hazardous Soils – Elevated Hydrocarbons	20.06	Export
14/05/2024	24819	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
14/05/2024	24820	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
14/05/2024	24822	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
14/05/2024	24823	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
15/05/2024	24906	Non Haz Soils c/w Mixed Waste (17-05-04)	20.40	Export
15/05/2024	24956	Non Haz Soils c/w Mixed Waste (17-05-04)	19.24	Export
15/05/2024	24972	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
15/05/2024	24973	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
15/05/2024	24974	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
15/05/2024	24975	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
15/05/2024	24976	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
15/05/2024	24977	Hazardous Soils – Elevated Hydrocarbons	20.12	Export
15/05/2024	24978	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
15/05/2024	24979	Hazardous Soils – Elevated Hydrocarbons	20.22	Export
15/05/2024	24980	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
15/05/2024	24981	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
15/05/2024	24982	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
15/05/2024	24983	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
15/05/2024	24984	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
15/05/2024	24985	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
15/05/2024	24986	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
15/05/2024	24987	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
15/05/2024	24988	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
15/05/2024	24989	Hazardous Soils – Elevated Hydrocarbons	19.08	Export

15/05/2024	24990	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
16/05/2024	25070	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
16/05/2024	25071	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
16/05/2024	25072	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
16/05/2024	25073	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
16/05/2024	25074	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
16/05/2024	25075	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
16/05/2024	25076	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
16/05/2024	25077	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
16/05/2024	25078	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
16/05/2024	25079	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
16/05/2024	25082	Hazardous Soils – Elevated Hydrocarbons	20.40	Export
16/05/2024	25083	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
16/05/2024	25084	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
16/05/2024	25085	Hazardous Soils – Elevated Hydrocarbons	20.04	Export
16/05/2024	25086	Hazardous Soils – Elevated Hydrocarbons	20.14	Export
16/05/2024	25087	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
16/05/2024	25088	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
16/05/2024	25089	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
16/05/2024	25093	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
16/05/2024	25094	Non Haz Soils c/w Mixed Waste (17-09-04)	19.06	Export
16/05/2024	25095	Non Haz Soils c/w Mixed Waste (17-09-04)	18.00	Export
16/05/2024	25096	Non Haz Soils c/w Mixed Waste (17-05-04)	18.86	Export
16/05/2024	25097	Non Haz Soils c/w Mixed Waste (17-05-04)	18.62	Export
16/05/2024	25098	Non Haz Soils c/w Mixed Waste (17-05-04)	19.68	Export
16/05/2024	25099	Non Haz Soils c/w Mixed Waste (17-05-04)	19.54	Export
17/05/2024	24810	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
17/05/2024	24821	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
17/05/2024	24991	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
17/05/2024	24992	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
17/05/2024	24993	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
17/05/2024	24994	Hazardous Soils – Elevated Hydrocarbons	20.02	Export
17/05/2024	24995	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
17/05/2024	25199	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
17/05/2024	25200	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
17/05/2024	25201	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
17/05/2024	25202	Hazardous Soils – Elevated Hydrocarbons	20.24	Export
17/05/2024	25203	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
17/05/2024	25204	Hazardous Soils – Elevated Hydrocarbons	20.58	Export
17/05/2024	25205	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
17/05/2024	25206	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
17/05/2024	25207	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
17/05/2024	25208	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
17/05/2024	25209	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
17/05/2024	25210	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
17/05/2024	25211	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
17/05/2024	25212	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
17/05/2024	25213	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
17/05/2024	25214	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
17/05/2024	25230	Non Haz Soils c/w Mixed Waste (17-05-04)	18.80	Export
17/05/2024	25231	Non Haz Soils c/w Mixed Waste (17-05-04)	19.22	Export
17/05/2024	25232	Non Haz Soils c/w Mixed Waste (17-05-04)	19.60	Export
17/05/2024	25233	Non Haz Soils c/w Mixed Waste (17-05-04)	19.44	Export

17/05/2024	25234	Non Haz Soils c/w Mixed Waste (17-09-04)	18.00	Export
17/05/2024	25235	Non Haz Soils c/w Mixed Waste (17-09-04)	19.32	Export
17/05/2024	25404	Hazardous Soils – Elevated Hydrocarbons	20.00	Export
18/05/2024	25298	Non Haz Soils c/w Mixed Waste (17-09-04)	19.04	Export
18/05/2024	25299	Non Haz Soils c/w Mixed Waste (17-09-04)	19.24	Export
18/05/2024	25418	Non Haz Soils c/w Mixed Waste (17-05-04)	18.24	Export
18/05/2024	25419	Non Haz Soils c/w Mixed Waste (17-05-04)	18.00	Export
18/05/2024	25420	Non Haz Soils c/w Mixed Waste (17-05-04)	20.28	Export
18/05/2024	25421	Non Haz Soils c/w Mixed Waste (17-05-04)	19.42	Export
20/05/2024	25080	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25081	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
20/05/2024	25090	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25091	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
20/05/2024	25092	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
20/05/2024	25300	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25301	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25302	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25303	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
20/05/2024	25304	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25305	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
20/05/2024	25306	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
20/05/2024	25307	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
20/05/2024	25308	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
20/05/2024	25310	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
20/05/2024	25312	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
20/05/2024	25315	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
20/05/2024	25341	Non Haz Soils c/w Mixed Waste (17-05-04)	18.24	Export
20/05/2024	25342	Non Haz Soils c/w Mixed Waste (17-05-04)	18.00	Export
20/05/2024	25343	Non Haz Soils c/w Mixed Waste (17-05-04)	19.42	Export
20/05/2024	25361	Non Haz Soils c/w Mixed Waste (17-09-04)	20.20	Export
20/05/2024	25362	Non Haz Soils c/w Mixed Waste (17-09-04)	20.50	Export
20/05/2024	25405	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
20/05/2024	25406	Hazardous Soils – Elevated Hydrocarbons	20.30	Export
20/05/2024	25407	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25309	Hazardous Soils – Elevated Hydrocarbons	19.92	Export
21/05/2024	25311	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
21/05/2024	25344	Non Haz Soils c/w Mixed Waste (17-05-04)	19.24	Export
21/05/2024	25345	Non Haz Soils c/w Mixed Waste (17-05-04)	18.94	Export
21/05/2024	25346	Non Haz Soils c/w Mixed Waste (17-05-04)	17.94	Export
21/05/2024	25347	Non Haz Soils c/w Mixed Waste (17-05-04)	18.70	Export
21/05/2024	25348	Non Haz Soils c/w Mixed Waste (17-05-04)	19.56	Export
21/05/2024	25349	Non Haz Soils c/w Mixed Waste (17-05-04)	19.26	Export
21/05/2024	25351	Non Haz Soils c/w Mixed Waste (17-05-04)	19.16	Export
21/05/2024	25363	Non Haz Soils c/w Mixed Waste (17-09-04)	18.00	Export
21/05/2024	25364	Non Haz Soils c/w Mixed Waste (17-09-04)	20.99	Export
21/05/2024	25408	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25442	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25443	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25444	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25445	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25446	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25447	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
21/05/2024	25448	Hazardous Soils – Elevated Hydrocarbons	18.00	Export

21/05/2024	25449	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
21/05/2024	25450	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
21/05/2024	25451	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
21/05/2024	25452	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
21/05/2024	25453	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
21/05/2024	25454	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
21/05/2024	25456	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
21/05/2024	25457	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
21/05/2024	25458	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
21/05/2024	25459	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
21/05/2024	25460	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
21/05/2024	25464	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
22/05/2024	25313	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25314	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25316	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25317	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
22/05/2024	25318	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
22/05/2024	25350	Non Haz Soils c/w Mixed Waste (17-05-04)	18.72	Export
22/05/2024	25352	Non Haz Soils c/w Mixed Waste (17-05-04)	18.86	Export
22/05/2024	25353	Non Haz Soils c/w Mixed Waste (17-05-04)	19.52	Export
22/05/2024	25365	Non Haz Soils c/w Mixed Waste (17-09-04)	19.32	Export
22/05/2024	25366	Non Haz Soils c/w Mixed Waste (17-09-04)	20.00	Export
22/05/2024	25455	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
22/05/2024	25461	Hazardous Soils – Elevated Hydrocarbons	20.44	Export
22/05/2024	25563	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
22/05/2024	25564	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25565	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25566	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25567	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
22/05/2024	25568	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
22/05/2024	25569	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
22/05/2024	25570	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
22/05/2024	25571	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
22/05/2024	25572	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
22/05/2024	25573	Hazardous Soils – Elevated Hydrocarbons	20.44	Export
22/05/2024	25574	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
22/05/2024	25575	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
22/05/2024	25576	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25577	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/05/2024	25578	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
22/05/2024	25579	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
23/05/2024	25354	Non Haz Soils c/w Mixed Waste (17-05-04)	19.32	Export
23/05/2024	25355	Non Haz Soils c/w Mixed Waste (17-05-04)	18.36	Export
23/05/2024	25356	Non Haz Soils c/w Mixed Waste (17-05-04)	19.82	Export
23/05/2024	25367	Non Haz Soils c/w Mixed Waste (17-09-04)	18.00	Export
23/05/2024	25462	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
23/05/2024	25463	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25754	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25755	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25756	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
23/05/2024	25757	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25758	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25759	Hazardous Soils – Elevated Hydrocarbons	18.00	Export

23/05/2024	25760	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
23/05/2024	25761	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
23/05/2024	25762	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
23/05/2024	25763	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
23/05/2024	25764	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
23/05/2024	25765	Hazardous Soils – Elevated Hydrocarbons	20.22	Export
23/05/2024	25766	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
23/05/2024	25767	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
23/05/2024	25768	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25769	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25773	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
23/05/2024	25774	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
23/05/2024	25775	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
24/05/2024	25369	Non Haz Soils c/w Mixed Waste (17-09-04)	19.42	Export
24/05/2024	25580	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
24/05/2024	25581	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
24/05/2024	25877	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25878	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25880	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25881	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25883	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25884	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
24/05/2024	25885	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25886	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25887	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25888	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
24/05/2024	25889	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
24/05/2024	25890	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
24/05/2024	25891	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
24/05/2024	25892	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
24/05/2024	25893	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
24/05/2024	25894	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
24/05/2024	25895	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
24/05/2024	25896	Hazardous Soils – Elevated Hydrocarbons	20.28	Export
24/05/2024	25897	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
24/05/2024	25898	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
24/05/2024	26238	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
28/05/2024	25770	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
28/05/2024	25771	Hazardous Soils – Elevated Hydrocarbons	15.48	Export
28/05/2024	25772	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
28/05/2024	26099	Hazardous Soils – Elevated Hydrocarbons	17.34	Export
28/05/2024	26100	Hazardous Soils – Elevated Hydrocarbons	17.58	Export
28/05/2024	26101	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
28/05/2024	26102	Hazardous Soils – Elevated Hydrocarbons	17.72	Export
28/05/2024	26103	Hazardous Soils – Elevated Hydrocarbons	17.94	Export
28/05/2024	26104	Hazardous Soils – Elevated Hydrocarbons	17.52	Export
28/05/2024	26105	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
28/05/2024	26106	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
28/05/2024	26107	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
28/05/2024	26111	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
28/05/2024	26112	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
28/05/2024	26113	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
28/05/2024	26116	Hazardous Soils – Elevated Hydrocarbons	18.92	Export

28/05/2024	26117	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
28/05/2024	26118	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
28/05/2024	26119	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
29/05/2024	25879	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
29/05/2024	26115	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
29/05/2024	26346	Hazardous Soils – Elevated Hydrocarbons	17.04	Export
29/05/2024	26347	Hazardous Soils – Elevated Hydrocarbons	17.02	Export
29/05/2024	26348	Hazardous Soils – Elevated Hydrocarbons	16.62	Export
29/05/2024	26349	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
29/05/2024	26350	Hazardous Soils – Elevated Hydrocarbons	17.60	Export
29/05/2024	26351	Hazardous Soils – Elevated Hydrocarbons	17.22	Export
29/05/2024	26352	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
29/05/2024	26353	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
29/05/2024	26354	Hazardous Soils – Elevated Hydrocarbons	17.66	Export
29/05/2024	26355	Hazardous Soils – Elevated Hydrocarbons	17.42	Export
29/05/2024	26356	Hazardous Soils – Elevated Hydrocarbons	17.72	Export
29/05/2024	26357	Hazardous Soils – Elevated Hydrocarbons	17.66	Export
29/05/2024	26358	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
29/05/2024	26359	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
29/05/2024	26360	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
29/05/2024	26361	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
29/05/2024	26362	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
29/05/2024	26364	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
29/05/2024	26365	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
29/05/2024	26366	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
29/05/2024	26368	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
29/05/2024	26369	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
30/05/2024	25882	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
30/05/2024	26108	Hazardous Soils – Elevated Hydrocarbons	16.82	Export
30/05/2024	26109	Hazardous Soils – Elevated Hydrocarbons	17.20	Export
30/05/2024	26110	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
30/05/2024	26114	Hazardous Soils – Elevated Hydrocarbons	16.64	Export
30/05/2024	26363	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
30/05/2024	26367	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
30/05/2024	26540	Hazardous Soils – Elevated Hydrocarbons	17.26	Export
30/05/2024	26541	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
30/05/2024	26542	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
30/05/2024	26543	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
30/05/2024	26544	Hazardous Soils – Elevated Hydrocarbons	17.90	Export
30/05/2024	26545	Hazardous Soils – Elevated Hydrocarbons	17.74	Export
30/05/2024	26546	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
30/05/2024	26547	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
30/05/2024	26548	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
30/05/2024	26549	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
30/05/2024	26550	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
30/05/2024	26551	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
30/05/2024	26552	Hazardous Soils – Elevated Hydrocarbons	19.88	Export
30/05/2024	26553	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
30/05/2024	26554	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
30/05/2024	26556	Hazardous Soils – Elevated Hydrocarbons	20.12	Export
30/05/2024	26557	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
31/05/2024	26555	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
31/05/2024	26558	Hazardous Soils – Elevated Hydrocarbons	19.36	Export

31/05/2024	26805	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
31/05/2024	26806	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
31/05/2024	26808	Hazardous Soils – Elevated Hydrocarbons	17.82	Export
31/05/2024	26809	Hazardous Soils – Elevated Hydrocarbons	17.04	Export
31/05/2024	26811	Hazardous Soils – Elevated Hydrocarbons	17.76	Export
31/05/2024	26812	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
31/05/2024	26813	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
31/05/2024	26814	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
31/05/2024	26815	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
31/05/2024	26816	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
31/05/2024	26817	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
31/05/2024	26818	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
31/05/2024	26819	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
31/05/2024	26820	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
31/05/2024	26821	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
31/05/2024	26822	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
31/05/2024	26823	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
03/06/2024	26824	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
03/06/2024	26825	Hazardous Soils – Elevated Hydrocarbons	19.94	Export
03/06/2024	26826	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
03/06/2024	26827	Hazardous Soils – Elevated Hydrocarbons	19.88	Export
03/06/2024	26828	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
03/06/2024	27332	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
03/06/2024	27333	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
03/06/2024	27334	Hazardous Soils – Elevated Hydrocarbons	17.12	Export
03/06/2024	27335	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
03/06/2024	27336	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
03/06/2024	27337	Hazardous Soils – Elevated Hydrocarbons	17.62	Export
03/06/2024	27338	Hazardous Soils – Elevated Hydrocarbons	17.38	Export
03/06/2024	27339	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
03/06/2024	27340	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
03/06/2024	27341	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
03/06/2024	27342	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
03/06/2024	27343	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
03/06/2024	27344	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
03/06/2024	27345	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
03/06/2024	27346	Hazardous Soils – Elevated Hydrocarbons	20.20	Export
03/06/2024	27347	Hazardous Soils – Elevated Hydrocarbons	20.14	Export
03/06/2024	27348	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
03/06/2024	27349	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
03/06/2024	27350	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
03/06/2024	27351	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
03/06/2024	27352	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
03/06/2024	27353	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
04/06/2024	26807	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
04/06/2024	27488	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
04/06/2024	27489	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
04/06/2024	27490	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
04/06/2024	27491	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
04/06/2024	27492	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
04/06/2024	27493	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
04/06/2024	27494	Hazardous Soils – Elevated Hydrocarbons	16.68	Export
04/06/2024	27497	Hazardous Soils – Elevated Hydrocarbons	19.28	Export

04/06/2024	27498	Hazardous Soils – Elevated Hydrocarbons	20.12	Export
04/06/2024	27500	Hazardous Soils – Elevated Hydrocarbons	17.62	Export
04/06/2024	27501	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
04/06/2024	27503	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
04/06/2024	27504	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
04/06/2024	27505	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
04/06/2024	27507	Hazardous Soils – Elevated Hydrocarbons	21.26	Export
04/06/2024	27570	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27571	Soils Containing Himalayan Balsam	20.00	Export
04/06/2024	27572	Soils Containing Himalayan Balsam	20.10	Export
04/06/2024	27574	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27575	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27576	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27577	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27578	Soils Containing Himalayan Balsam	19.60	Export
04/06/2024	27579	Soils Containing Himalayan Balsam	19.80	Export
04/06/2024	27580	Soils Containing Himalayan Balsam	19.75	Export
04/06/2024	27581	Soils Containing Himalayan Balsam	19.90	Export
04/06/2024	27582	Soils Containing Himalayan Balsam	18.92	Export
04/06/2024	27583	Soils Containing Himalayan Balsam	19.06	Export
04/06/2024	27584	Soils Containing Himalayan Balsam	19.22	Export
05/06/2024	27499	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
05/06/2024	27506	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
05/06/2024	27508	Hazardous Soils – Elevated Hydrocarbons	19.96	Export
05/06/2024	27830	Soils Containing Himalayan Balsam	19.50	Export
05/06/2024	27831	Soils Containing Himalayan Balsam	19.40	Export
05/06/2024	27832	Soils Containing Himalayan Balsam	19.30	Export
05/06/2024	27833	Soils Containing Himalayan Balsam	19.50	Export
05/06/2024	27834	Soils Containing Himalayan Balsam	19.15	Export
05/06/2024	27835	Soils Containing Himalayan Balsam	19.05	Export
05/06/2024	27836	Soils Containing Himalayan Balsam	19.00	Export
05/06/2024	27837	Soils Containing Himalayan Balsam	19.10	Export
05/06/2024	27838	Soils Containing Himalayan Balsam	19.00	Export
05/06/2024	27839	Soils Containing Himalayan Balsam	19.88	Export
05/06/2024	27840	Soils Containing Himalayan Balsam	19.94	Export
05/06/2024	27841	Soils Containing Himalayan Balsam	19.90	Export
05/06/2024	27842	Soils Containing Himalayan Balsam	19.60	Export
05/06/2024	27843	Soils Containing Himalayan Balsam	19.58	Export
05/06/2024	27845	Hazardous Soils – Elevated Hydrocarbons	17.62	Export
05/06/2024	27846	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
05/06/2024	27847	Hazardous Soils – Elevated Hydrocarbons	17.78	Export
05/06/2024	27848	Hazardous Soils – Elevated Hydrocarbons	20.38	Export
05/06/2024	27849	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
05/06/2024	27850	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
05/06/2024	27851	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
05/06/2024	27852	Hazardous Soils – Elevated Hydrocarbons	17.66	Export
05/06/2024	27853	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
05/06/2024	27854	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
05/06/2024	27855	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
05/06/2024	27856	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
05/06/2024	27866	Hazardous Soils – Elevated Hydrocarbons	20.04	Export
05/06/2024	27867	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
05/06/2024	27868	Hazardous Soils – Elevated Hydrocarbons	19.76	Export

06/06/2024	26810	Hazardous Soils – Elevated Hydrocarbons	17.54	Export
06/06/2024	27354	Hazardous Soils – Elevated Hydrocarbons	17.32	Export
06/06/2024	27355	Hazardous Soils – Elevated Hydrocarbons	17.72	Export
06/06/2024	27487	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
06/06/2024	27495	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
06/06/2024	27496	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
06/06/2024	27502	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
06/06/2024	27964	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
06/06/2024	27965	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
06/06/2024	27966	Hazardous Soils – Elevated Hydrocarbons	17.92	Export
06/06/2024	27967	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
06/06/2024	27969	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
06/06/2024	27970	Hazardous Soils – Elevated Hydrocarbons	19.94	Export
06/06/2024	27971	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
06/06/2024	27972	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
06/06/2024	27973	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
06/06/2024	27974	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
06/06/2024	27975	Hazardous Soils – Elevated Hydrocarbons	20.02	Export
06/06/2024	27976	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
06/06/2024	27977	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
06/06/2024	27978	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
06/06/2024	27979	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
06/06/2024	27981	Soils Containing Himalayan Balsam	19.78	Export
06/06/2024	27982	Soils Containing Himalayan Balsam	19.92	Export
06/06/2024	27983	Soils Containing Himalayan Balsam	20.00	Export
06/06/2024	27984	Soils Containing Himalayan Balsam	19.88	Export
06/06/2024	27985	Soils Containing Himalayan Balsam	19.98	Export
07/06/2024	27857	Hazardous Soils – Elevated Hydrocarbons	17.54	Export
07/06/2024	27858	Hazardous Soils – Elevated Hydrocarbons	16.82	Export
07/06/2024	27859	Hazardous Soils – Elevated Hydrocarbons	16.98	Export
07/06/2024	27860	Hazardous Soils – Elevated Hydrocarbons	17.58	Export
07/06/2024	27861	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
07/06/2024	27862	Hazardous Soils – Elevated Hydrocarbons	17.64	Export
07/06/2024	27863	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
07/06/2024	27864	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
07/06/2024	27865	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
07/06/2024	28286	Hazardous Soils – Elevated Hydrocarbons	19.88	Export
07/06/2024	28287	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
07/06/2024	28288	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
07/06/2024	28289	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
07/06/2024	28290	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
07/06/2024	28291	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
07/06/2024	28292	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
07/06/2024	28293	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
07/06/2024	28294	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
07/06/2024	28295	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
07/06/2024	28296	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
07/06/2024	28297	Hazardous Soils – Elevated Hydrocarbons	20.18	Export
07/06/2024	28298	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
07/06/2024	28299	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
07/06/2024	28300	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
07/06/2024	28306	Hazardous Soils – Elevated Hydrocarbons	17.16	Export
10/06/2024	28605	Hazardous Soils – Elevated Hydrocarbons	17.70	Export

10/06/2024	28606	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
10/06/2024	28607	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
10/06/2024	28608	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
10/06/2024	28609	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
10/06/2024	28610	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
10/06/2024	28611	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
10/06/2024	28612	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
10/06/2024	28613	Hazardous Soils – Elevated Hydrocarbons	15.56	Export
10/06/2024	28614	Hazardous Soils – Elevated Hydrocarbons	16.94	Export
10/06/2024	28615	Hazardous Soils – Elevated Hydrocarbons	17.26	Export
10/06/2024	28616	Hazardous Soils – Elevated Hydrocarbons	17.58	Export
10/06/2024	28617	Hazardous Soils – Elevated Hydrocarbons	17.42	Export
10/06/2024	28618	Hazardous Soils – Elevated Hydrocarbons	17.32	Export
10/06/2024	28619	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
10/06/2024	28620	Hazardous Soils – Elevated Hydrocarbons	20.30	Export
10/06/2024	28621	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
10/06/2024	28622	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
10/06/2024	28623	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
10/06/2024	28624	Hazardous Soils – Elevated Hydrocarbons	17.82	Export
10/06/2024	28625	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
10/06/2024	28626	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
11/06/2024	27968	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
11/06/2024	27980	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
11/06/2024	28301	Hazardous Soils – Elevated Hydrocarbons	17.82	Export
11/06/2024	28302	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
11/06/2024	28303	Hazardous Soils – Elevated Hydrocarbons	20.30	Export
11/06/2024	28304	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
11/06/2024	28305	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
11/06/2024	28872	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
11/06/2024	28873	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
11/06/2024	28874	Hazardous Soils – Elevated Hydrocarbons	16.28	Export
11/06/2024	28875	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
11/06/2024	28876	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
11/06/2024	28877	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
11/06/2024	28878	Hazardous Soils – Elevated Hydrocarbons	17.50	Export
11/06/2024	28879	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
11/06/2024	28880	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
11/06/2024	28881	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
11/06/2024	28882	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
11/06/2024	28883	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
11/06/2024	28884	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
11/06/2024	28885	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
11/06/2024	28886	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
12/06/2024	28627	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
12/06/2024	28628	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
12/06/2024	28864	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
12/06/2024	28865	Hazardous Soils – Elevated Hydrocarbons	17.54	Export
12/06/2024	28866	Hazardous Soils – Elevated Hydrocarbons	17.54	Export
12/06/2024	28867	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
12/06/2024	29102	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
12/06/2024	29103	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
12/06/2024	29104	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
12/06/2024	29105	Hazardous Soils – Elevated Hydrocarbons	19.32	Export

12/06/2024	29106	Hazardous Soils – Elevated Hydrocarbons	17.58	Export
12/06/2024	29107	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
12/06/2024	29108	Hazardous Soils – Elevated Hydrocarbons	17.60	Export
12/06/2024	29109	Hazardous Soils – Elevated Hydrocarbons	20.00	Export
12/06/2024	29110	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
12/06/2024	29111	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
12/06/2024	29112	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
12/06/2024	29113	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
12/06/2024	29114	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
12/06/2024	29115	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
12/06/2024	29116	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
12/06/2024	29117	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
12/06/2024	29118	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
12/06/2024	29119	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
12/06/2024	29120	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
12/06/2024	29353	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
12/06/2024	29354	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
13/06/2024	28887	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
13/06/2024	28888	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
13/06/2024	28889	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
13/06/2024	29355	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
13/06/2024	29386	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
13/06/2024	29387	Hazardous Soils – Elevated Hydrocarbons	17.54	Export
13/06/2024	29388	Hazardous Soils – Elevated Hydrocarbons	17.40	Export
13/06/2024	29389	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
13/06/2024	29390	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
13/06/2024	29391	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
13/06/2024	29392	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
13/06/2024	29393	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
13/06/2024	29394	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
13/06/2024	29581	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
13/06/2024	29582	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
13/06/2024	29583	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
13/06/2024	29584	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
13/06/2024	29585	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
13/06/2024	29586	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
13/06/2024	29587	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
13/06/2024	29588	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
13/06/2024	29589	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
13/06/2024	29590	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
13/06/2024	29591	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
13/06/2024	29592	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
13/06/2024	29593	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
13/06/2024	29594	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
13/06/2024	29595	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
13/06/2024	29596	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
13/06/2024	29597	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
13/06/2024	29598	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
13/06/2024	29813	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
14/06/2024	29790	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
14/06/2024	29791	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
14/06/2024	29792	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
14/06/2024	29793	Hazardous Soils – Elevated Hydrocarbons	18.96	Export

14/06/2024	29794	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
14/06/2024	29795	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
14/06/2024	29796	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
14/06/2024	29797	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
14/06/2024	29798	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
14/06/2024	29799	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
14/06/2024	29800	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
14/06/2024	29801	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
14/06/2024	29802	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
14/06/2024	29803	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
14/06/2024	29804	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
14/06/2024	29805	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
14/06/2024	29806	Hazardous Soils – Elevated Hydrocarbons	19.99	Export
14/06/2024	29807	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
14/06/2024	29808	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
14/06/2024	29809	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
14/06/2024	29810	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
14/06/2024	29811	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
14/06/2024	29812	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
14/06/2024	29814	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
14/06/2024	29815	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
14/06/2024	29816	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
14/06/2024	29817	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
14/06/2024	29818	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
14/06/2024	29819	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
14/06/2024	29953	Hazardous Soils – Elevated Hydrocarbons	17.76	Export
14/06/2024	29954	Hazardous Soils – Elevated Hydrocarbons	17.82	Export
14/06/2024	29955	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
14/06/2024	29956	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
17/06/2024	29689	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
17/06/2024	29940	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
17/06/2024	29941	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
17/06/2024	29942	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
17/06/2024	29943	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
17/06/2024	29944	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
17/06/2024	29945	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
17/06/2024	29946	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
17/06/2024	29947	Hazardous Soils – Elevated Hydrocarbons	17.66	Export
17/06/2024	29948	Hazardous Soils – Elevated Hydrocarbons	16.72	Export
17/06/2024	29949	Hazardous Soils – Elevated Hydrocarbons	15.48	Export
17/06/2024	29950	Hazardous Soils – Elevated Hydrocarbons	17.68	Export
17/06/2024	29951	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
17/06/2024	30018	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
17/06/2024	30019	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
17/06/2024	30020	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
17/06/2024	30021	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
17/06/2024	30022	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
17/06/2024	30023	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
17/06/2024	30087	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
17/06/2024	30088	Hazardous Soils – Elevated Hydrocarbons	16.42	Export
17/06/2024	30089	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
17/06/2024	30090	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
17/06/2024	30091	Hazardous Soils – Elevated Hydrocarbons	18.62	Export

17/06/2024	30092	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
17/06/2024	30093	Hazardous Soils – Elevated Hydrocarbons	20.30	Export
17/06/2024	30094	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
17/06/2024	30095	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
17/06/2024	30096	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
17/06/2024	30097	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
17/06/2024	30268	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
18/06/2024	30163	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
18/06/2024	30164	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
18/06/2024	30165	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
18/06/2024	30166	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
18/06/2024	30167	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
18/06/2024	30168	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
18/06/2024	30169	Hazardous Soils – Elevated Hydrocarbons	17.78	Export
18/06/2024	30170	Hazardous Soils – Elevated Hydrocarbons	17.92	Export
18/06/2024	30171	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
18/06/2024	30172	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
18/06/2024	30173	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
18/06/2024	30174	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
18/06/2024	30175	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
18/06/2024	30176	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
18/06/2024	30177	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
18/06/2024	30184	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
18/06/2024	30185	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
18/06/2024	30186	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
18/06/2024	30187	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
18/06/2024	30188	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
18/06/2024	30189	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
18/06/2024	30190	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
18/06/2024	30191	Hazardous Soils – Elevated Hydrocarbons	17.64	Export
18/06/2024	30192	Hazardous Soils – Elevated Hydrocarbons	15.82	Export
18/06/2024	30211	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
18/06/2024	30215	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
18/06/2024	30216	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
18/06/2024	30217	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
18/06/2024	30218	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
19/06/2024	30016	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
19/06/2024	30017	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
19/06/2024	30024	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
19/06/2024	30025	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
19/06/2024	30026	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
19/06/2024	30027	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
19/06/2024	30028	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
19/06/2024	30029	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
19/06/2024	30030	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
19/06/2024	30031	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
19/06/2024	30032	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
19/06/2024	30033	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
19/06/2024	30178	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
19/06/2024	30212	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
19/06/2024	30213	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
19/06/2024	30396	Hazardous Soils – Elevated Hydrocarbons	16.96	Export
19/06/2024	30397	Hazardous Soils – Elevated Hydrocarbons	17.90	Export

19/06/2024	30398	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
19/06/2024	30399	Hazardous Soils – Elevated Hydrocarbons	17.92	Export
19/06/2024	30400	Hazardous Soils – Elevated Hydrocarbons	17.74	Export
19/06/2024	30401	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
19/06/2024	30402	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
19/06/2024	30403	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
19/06/2024	30404	Hazardous Soils – Elevated Hydrocarbons	15.90	Export
19/06/2024	30405	Hazardous Soils – Elevated Hydrocarbons	17.42	Export
19/06/2024	30406	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
19/06/2024	30407	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
19/06/2024	30413	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
19/06/2024	30425	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
19/06/2024	30426	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
19/06/2024	30427	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
19/06/2024	30428	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
19/06/2024	30432	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
20/06/2024	30214	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
20/06/2024	30429	Hazardous Soils – Elevated Hydrocarbons	17.40	Export
20/06/2024	30430	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
20/06/2024	30431	Hazardous Soils – Elevated Hydrocarbons	20.22	Export
20/06/2024	30543	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
20/06/2024	30544	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
20/06/2024	30545	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
20/06/2024	30546	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
20/06/2024	30547	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
20/06/2024	30548	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
20/06/2024	30549	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
20/06/2024	30550	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
20/06/2024	30551	Hazardous Soils – Elevated Hydrocarbons	17.08	Export
20/06/2024	30552	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
20/06/2024	30553	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
20/06/2024	30554	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
20/06/2024	30555	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
20/06/2024	30556	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
20/06/2024	30557	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
20/06/2024	30558	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
20/06/2024	30559	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
20/06/2024	30560	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
20/06/2024	30561	Hazardous Soils – Elevated Hydrocarbons	17.56	Export
20/06/2024	30562	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
20/06/2024	30564	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
20/06/2024	30565	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
20/06/2024	30568	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
20/06/2024	30569	Hazardous Soils – Elevated Hydrocarbons	17.14	Export
20/06/2024	30570	Hazardous Soils – Elevated Hydrocarbons	17.86	Export
20/06/2024	30571	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
21/06/2024	30563	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
21/06/2024	30566	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
21/06/2024	30567	Hazardous Soils – Elevated Hydrocarbons	20.24	Export
21/06/2024	30572	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
21/06/2024	30573	Hazardous Soils – Elevated Hydrocarbons	20.08	Export
21/06/2024	30574	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
21/06/2024	30693	Hazardous Soils – Elevated Hydrocarbons	18.50	Export

21/06/2024	30694	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
21/06/2024	30695	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
21/06/2024	30696	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
21/06/2024	30697	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
21/06/2024	30698	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
21/06/2024	30699	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
21/06/2024	30700	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
21/06/2024	30701	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
21/06/2024	30702	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
21/06/2024	30703	Hazardous Soils – Elevated Hydrocarbons	17.00	Export
21/06/2024	30704	Hazardous Soils – Elevated Hydrocarbons	17.72	Export
21/06/2024	30705	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
21/06/2024	30706	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
21/06/2024	30707	Hazardous Soils – Elevated Hydrocarbons	20.26	Export
21/06/2024	30708	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
21/06/2024	30709	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
21/06/2024	30710	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
21/06/2024	30711	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
21/06/2024	30712	Hazardous Soils – Elevated Hydrocarbons	17.38	Export
21/06/2024	30713	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
21/06/2024	30714	Hazardous Soils – Elevated Hydrocarbons	17.44	Export
21/06/2024	30715	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
21/06/2024	30716	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
21/06/2024	30717	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
21/06/2024	30718	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
21/06/2024	30719	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
21/06/2024	30723	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
21/06/2024	30724	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
24/06/2024	30720	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
24/06/2024	30721	Hazardous Soils – Elevated Hydrocarbons	17.50	Export
24/06/2024	30722	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
24/06/2024	30915	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
24/06/2024	30916	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
24/06/2024	30917	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
24/06/2024	30918	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
24/06/2024	30919	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
24/06/2024	30920	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
24/06/2024	30921	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
24/06/2024	30924	Hazardous Soils – Elevated Hydrocarbons	17.94	Export
24/06/2024	30925	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
24/06/2024	30926	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
24/06/2024	30928	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
24/06/2024	30929	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
24/06/2024	30931	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
24/06/2024	30932	Hazardous Soils – Elevated Hydrocarbons	19.88	Export
24/06/2024	30964	Hazardous Soils – Elevated Hydrocarbons	20.24	Export
24/06/2024	30965	Hazardous Soils – Elevated Hydrocarbons	19.96	Export
24/06/2024	30966	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
24/06/2024	30967	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
24/06/2024	30968	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
24/06/2024	30969	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
24/06/2024	30970	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
24/06/2024	30971	Hazardous Soils – Elevated Hydrocarbons	18.98	Export

24/06/2024	30972	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
24/06/2024	30973	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
24/06/2024	30974	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
24/06/2024	30975	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
24/06/2024	30976	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
24/06/2024	30979	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
24/06/2024	30980	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
24/06/2024	31035	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
24/06/2024	31036	Hazardous Soils – Elevated Hydrocarbons	17.40	Export
24/06/2024	31037	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
25/06/2024	30977	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
25/06/2024	30978	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
25/06/2024	31022	6N Fill Material	19.34	Import
25/06/2024	31041	6N Fill Material	19.08	Import
25/06/2024	31042	6N Fill Material	19.34	Import
25/06/2024	31043	6N Fill Material	19.26	Import
25/06/2024	31044	6N Fill Material	19.40	Import
25/06/2024	31045	6N Fill Material	19.14	Import
25/06/2024	31046	6N Fill Material	19.44	Import
25/06/2024	31047	6N Fill Material	18.70	Import
25/06/2024	31048	6N Fill Material	19.50	Import
25/06/2024	31049	6N Fill Material	18.90	Import
25/06/2024	31140	Hazardous Soils – Elevated Hydrocarbons	17.78	Export
25/06/2024	31141	Hazardous Soils – Elevated Hydrocarbons	17.74	Export
25/06/2024	31142	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
25/06/2024	31143	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
25/06/2024	31144	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
25/06/2024	31145	Hazardous Soils – Elevated Hydrocarbons	17.76	Export
25/06/2024	31146	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
25/06/2024	31147	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
25/06/2024	31150	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
25/06/2024	31151	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
25/06/2024	31152	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
25/06/2024	31153	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
25/06/2024	31154	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
25/06/2024	31155	Hazardous Soils – Elevated Hydrocarbons	19.98	Export
25/06/2024	31156	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
25/06/2024	31157	Hazardous Soils – Elevated Hydrocarbons	19.96	Export
25/06/2024	31158	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
25/06/2024	31159	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
25/06/2024	31162	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
25/06/2024	31163	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
25/06/2024	31164	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
25/06/2024	31167	Hazardous Soils – Elevated Hydrocarbons	17.48	Export
25/06/2024	31168	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
25/06/2024	31169	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
25/06/2024	31171	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
25/06/2024	31172	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
25/06/2024	31176	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
25/06/2024	31177	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
26/06/2024	30922	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
26/06/2024	30923	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
26/06/2024	30961	Hazardous Soils – Elevated Hydrocarbons	18.42	Export

26/06/2024	30962	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
26/06/2024	30963	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
26/06/2024	31033	Hazardous Soils – Elevated Hydrocarbons	17.76	Export
26/06/2024	31034	Hazardous Soils – Elevated Hydrocarbons	17.70	Export
26/06/2024	31170	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
26/06/2024	31173	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
26/06/2024	31352	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
26/06/2024	31353	Hazardous Soils – Elevated Hydrocarbons	17.38	Export
26/06/2024	31354	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
26/06/2024	31355	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
26/06/2024	31356	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
26/06/2024	31357	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
26/06/2024	31358	Hazardous Soils – Elevated Hydrocarbons	20.02	Export
26/06/2024	31359	Hazardous Soils – Elevated Hydrocarbons	17.72	Export
26/06/2024	31366	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
26/06/2024	31376	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
26/06/2024	31378	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
26/06/2024	31379	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
26/06/2024	31380	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
26/06/2024	31381	Hazardous Soils – Elevated Hydrocarbons	16.68	Export
26/06/2024	31382	Hazardous Soils – Elevated Hydrocarbons	20.12	Export
26/06/2024	31425	6N Fill Material	19.10	Import
26/06/2024	31426	6N Fill Material	19.64	Import
26/06/2024	31427	6N Fill Material	19.48	Import
26/06/2024	31428	6N Fill Material	19.78	Import
26/06/2024	31429	6N Fill Material	19.56	Import
26/06/2024	31430	6N Fill Material	19.30	Import
26/06/2024	31431	6N Fill Material	18.92	Import
26/06/2024	31432	6N Fill Material	18.94	Import
26/06/2024	31433	6N Fill Material	19.32	Import
26/06/2024	31434	6N Fill Material	18.90	Import
27/06/2024	31148	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
27/06/2024	31149	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
27/06/2024	31160	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
27/06/2024	31161	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
27/06/2024	31165	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
27/06/2024	31166	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
27/06/2024	31360	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
27/06/2024	31361	Hazardous Soils – Elevated Hydrocarbons	17.08	Export
27/06/2024	31362	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
27/06/2024	31363	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
27/06/2024	31364	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
27/06/2024	31365	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
27/06/2024	31435	6N Fill Material	19.56	Import
27/06/2024	31436	6N Fill Material	19.22	Import
27/06/2024	31437	6N Fill Material	19.32	Import
27/06/2024	31438	6N Fill Material	17.90	Import
27/06/2024	31439	6N Fill Material	18.28	Import
27/06/2024	31440	6N Fill Material	18.00	Import
27/06/2024	31441	6N Fill Material	17.60	Import
27/06/2024	31442	6N Fill Material	18.18	Import
27/06/2024	31443	6N Fill Material	17.78	Import
27/06/2024	31444	6N Fill Material	17.80	Import

28/06/2024	31174	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
28/06/2024	31175	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
28/06/2024	31367	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
28/06/2024	31368	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
28/06/2024	31369	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
28/06/2024	31370	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
28/06/2024	31371	Hazardous Soils – Elevated Hydrocarbons	13.00	Export
28/06/2024	31372	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
28/06/2024	31373	Hazardous Soils – Elevated Hydrocarbons	16.90	Export
28/06/2024	31374	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
28/06/2024	31375	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
28/06/2024	31377	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
28/06/2024	31445	6N Fill Material	17.68	Import
28/06/2024	31446	6N Fill Material	17.20	Import
28/06/2024	31447	6N Fill Material	17.90	Import
28/06/2024	31448	6N Fill Material	15.96	Import
28/06/2024	31449	6N Fill Material	18.48	Import
28/06/2024	31450	6N Fill Material	19.00	Import
28/06/2024	31451	6N Fill Material	19.18	Import
28/06/2024	31452	6N Fill Material	17.54	Import
28/06/2024	31453	6N Fill Material	19.54	Import
28/06/2024	31454	6N Fill Material	19.58	Import
28/06/2024	31779	Hazardous Soils – Elevated Hydrocarbons	20.08	Export
28/06/2024	31780	Hazardous Soils – Elevated Hydrocarbons	17.40	Export
28/06/2024	31781	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
28/06/2024	31782	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
28/06/2024	31783	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
28/06/2024	31784	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
28/06/2024	31785	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
28/06/2024	31786	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
28/06/2024	31787	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
28/06/2024	31788	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
28/06/2024	31789	Hazardous Soils – Elevated Hydrocarbons	19.94	Export
28/06/2024	31790	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
28/06/2024	31792	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
28/06/2024	31793	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
28/06/2024	31795	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
28/06/2024	31796	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
01/07/2024	31455	6N Fill Material	19.46	Import
01/07/2024	31456	6N Fill Material	19.78	Import
01/07/2024	31457	6N Fill Material	19.70	Import
01/07/2024	31458	6N Fill Material	19.68	Import
01/07/2024	31459	6N Fill Material	19.60	Import
01/07/2024	31460	6N Fill Material	19.68	Import
01/07/2024	31461	6N Fill Material	19.60	Import
01/07/2024	31462	6N Fill Material	19.08	Import
01/07/2024	31463	6N Fill Material	19.80	Import
01/07/2024	31464	6N Fill Material	19.96	Import
01/07/2024	31791	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
01/07/2024	31794	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
01/07/2024	31974	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
01/07/2024	31975	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
01/07/2024	31976	Hazardous Soils – Elevated Hydrocarbons	18.08	Export

01/07/2024	31977	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
01/07/2024	31978	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
01/07/2024	31979	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
01/07/2024	31980	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
01/07/2024	31981	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
01/07/2024	31982	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
01/07/2024	31983	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
01/07/2024	31984	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
01/07/2024	31985	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
01/07/2024	31986	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
01/07/2024	31987	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
01/07/2024	31988	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
01/07/2024	31989	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
01/07/2024	31990	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
01/07/2024	31991	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
01/07/2024	31992	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
01/07/2024	31993	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
01/07/2024	31994	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
01/07/2024	31996	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
01/07/2024	31997	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
01/07/2024	31998	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
01/07/2024	31999	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
01/07/2024	32000	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
01/07/2024	32001	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
01/07/2024	32002	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
01/07/2024	32095	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
01/07/2024	32097	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
02/07/2024	30927	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
02/07/2024	30930	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
02/07/2024	31798	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
02/07/2024	32004	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
02/07/2024	32098	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
02/07/2024	32099	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
02/07/2024	32136	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
02/07/2024	32137	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
02/07/2024	32138	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
02/07/2024	32139	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
02/07/2024	32140	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32141	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
02/07/2024	32142	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
02/07/2024	32143	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
02/07/2024	32144	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
02/07/2024	32145	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32146	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
02/07/2024	32147	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
02/07/2024	32148	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32149	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
02/07/2024	32150	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
02/07/2024	32151	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
02/07/2024	32152	Hazardous Soils – Elevated Hydrocarbons	20.14	Export
02/07/2024	32153	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
02/07/2024	32154	Hazardous Soils – Elevated Hydrocarbons	19.92	Export
02/07/2024	32155	Hazardous Soils – Elevated Hydrocarbons	19.38	Export

02/07/2024	32156	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
02/07/2024	32157	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
02/07/2024	32158	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
02/07/2024	32160	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32161	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32162	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
02/07/2024	32163	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
02/07/2024	32164	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
02/07/2024	32165	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
02/07/2024	32166	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
02/07/2024	32168	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
02/07/2024	32239	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
02/07/2024	32240	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
03/07/2024	32096	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
03/07/2024	32251	6F2 Recycled	20.00	Import
03/07/2024	32292	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
03/07/2024	32293	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
03/07/2024	32404	6N Fill Material	19.60	Import
03/07/2024	32405	6N Fill Material	19.74	Import
03/07/2024	32406	6N Fill Material	19.54	Import
03/07/2024	32407	6N Fill Material	19.52	Import
03/07/2024	32408	6N Fill Material	19.86	Import
03/07/2024	32409	6N Fill Material	19.88	Import
03/07/2024	32410	6N Fill Material	19.68	Import
03/07/2024	32411	6N Fill Material	19.64	Import
03/07/2024	32412	6N Fill Material	19.80	Import
03/07/2024	32413	6N Fill Material	19.56	Import
03/07/2024	33317	6F2 Recycled	20.00	Import
04/07/2024	31797	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
04/07/2024	31995	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
04/07/2024	32003	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
04/07/2024	32159	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
04/07/2024	32294	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
04/07/2024	32295	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
04/07/2024	32296	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
04/07/2024	32297	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
04/07/2024	32298	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
04/07/2024	32299	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
04/07/2024	32301	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
04/07/2024	32305	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
04/07/2024	32713	6F2 Recycled	20.00	Import
04/07/2024	32714	6F2 Recycled	20.00	Import
04/07/2024	32715	6F2 Recycled	20.00	Import
04/07/2024	32716	6F2 Recycled	20.00	Import
04/07/2024	32717	6F2 Recycled	20.00	Import
04/07/2024	32718	6F2 Recycled	20.00	Import
04/07/2024	32719	6F2 Recycled	20.00	Import
04/07/2024	32720	6F2 Recycled	20.00	Import
04/07/2024	32721	6F2 Recycled	20.00	Import
04/07/2024	32722	6F2 Recycled	20.00	Import
04/07/2024	32723	6F2 Recycled	20.00	Import
04/07/2024	32724	6F2 Recycled	20.00	Import
04/07/2024	32725	6F2 Recycled	20.00	Import

04/07/2024	32726	6F2 Recycled	20.00	Import
04/07/2024	32727	6F2 Recycled	20.00	Import
04/07/2024	32829	6N Fill Material	19.54	Import
04/07/2024	32830	6N Fill Material	19.52	Import
04/07/2024	32831	6N Fill Material	19.62	Import
04/07/2024	32832	6N Fill Material	19.40	Import
04/07/2024	32833	6N Fill Material	19.74	Import
04/07/2024	32834	6N Fill Material	19.54	Import
04/07/2024	32835	6N Fill Material	19.76	Import
04/07/2024	32836	6N Fill Material	19.22	Import
04/07/2024	32837	6N Fill Material	19.22	Import
04/07/2024	32838	6N Fill Material	19.10	Import
04/07/2024	32867	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
05/07/2024	33001	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
05/07/2024	33002	Hazardous Soils – Elevated Hydrocarbons	19.98	Export
05/07/2024	33003	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
05/07/2024	33004	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
05/07/2024	33005	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
05/07/2024	33006	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
05/07/2024	33007	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
05/07/2024	33008	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
05/07/2024	33009	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
05/07/2024	33010	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
05/07/2024	33011	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
05/07/2024	33012	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
05/07/2024	33064	6N Fill Material	19.68	Import
05/07/2024	33065	6N Fill Material	19.26	Import
05/07/2024	33066	6N Fill Material	19.22	Import
05/07/2024	33067	6N Fill Material	19.54	Import
05/07/2024	33068	6N Fill Material	19.14	Import
05/07/2024	33069	6N Fill Material	19.60	Import
05/07/2024	33070	6N Fill Material	19.70	Import
05/07/2024	33071	6N Fill Material	19.80	Import
05/07/2024	33072	6N Fill Material	19.72	Import
05/07/2024	33073	6N Fill Material	19.00	Import
08/07/2024	33273	6N Fill Material	18.74	Import
08/07/2024	33274	6N Fill Material	17.32	Import
08/07/2024	33275	6N Fill Material	17.64	Import
08/07/2024	33276	6N Fill Material	17.64	Import
08/07/2024	33277	6N Fill Material	17.66	Import
08/07/2024	33278	6N Fill Material	19.20	Import
08/07/2024	33279	6N Fill Material	19.20	Import
08/07/2024	33280	6N Fill Material	19.12	Import
08/07/2024	33281	6N Fill Material	19.02	Import
08/07/2024	33282	6N Fill Material	18.72	Import
08/07/2024	33343	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
08/07/2024	33344	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
08/07/2024	33345	6F2 Recycled	20.00	Import
08/07/2024	33346	6F2 Recycled	20.00	Import
08/07/2024	33347	6F2 Recycled	20.00	Import
08/07/2024	33348	6F2 Recycled	20.00	Import
08/07/2024	33349	6F2 Recycled	20.00	Import
08/07/2024	33350	6F2 Recycled	20.00	Import

08/07/2024	33351	6F2 Recycled	20.00	Import
08/07/2024	33352	6F2 Recycled	20.00	Import
08/07/2024	33353	6F2 Recycled	20.00	Import
08/07/2024	33354	6F2 Recycled	20.00	Import
08/07/2024	33355	6F2 Recycled	20.00	Import
08/07/2024	33356	6F2 Recycled	20.00	Import
08/07/2024	33357	6F2 Recycled	20.00	Import
08/07/2024	33358	6F2 Recycled	20.00	Import
08/07/2024	33359	6F2 Recycled	20.00	Import
09/07/2024	32169	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
09/07/2024	32300	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
09/07/2024	33550	6F2 Recycled	19.90	Import
09/07/2024	33551	6F2 Recycled	20.00	Import
09/07/2024	33552	6F2 Recycled	20.00	Import
09/07/2024	33553	6F2 Recycled	20.00	Import
09/07/2024	33554	6F2 Recycled	20.00	Import
09/07/2024	33555	6F2 Recycled	20.00	Import
09/07/2024	33556	6F2 Recycled	20.00	Import
09/07/2024	33557	6F2 Recycled	20.00	Import
09/07/2024	33558	6F2 Recycled	20.00	Import
09/07/2024	33559	6F2 Recycled	20.00	Import
09/07/2024	33560	6F2 Recycled	20.00	Import
09/07/2024	33561	6F2 Recycled	20.00	Import
09/07/2024	33562	6F2 Recycled	20.00	Import
09/07/2024	33563	6F2 Recycled	20.00	Import
09/07/2024	33564	6F2 Recycled	20.00	Import
09/07/2024	33571	6F2 Recycled	20.00	Import
10/07/2024	33630	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
10/07/2024	33631	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
10/07/2024	33632	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
10/07/2024	33633	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
10/07/2024	33634	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
10/07/2024	33635	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
10/07/2024	33636	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
10/07/2024	33637	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
10/07/2024	33638	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
10/07/2024	33689	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
10/07/2024	33690	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
10/07/2024	33691	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
10/07/2024	33784	6F2 Recycled	20.00	Import
11/07/2024	31799	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
11/07/2024	32167	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
11/07/2024	32309	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
11/07/2024	32310	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
11/07/2024	32312	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
11/07/2024	32869	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
11/07/2024	33881	6F2 Recycled	20.00	Import
11/07/2024	33882	6F2 Recycled	20.00	Import
11/07/2024	33883	6F2 Recycled	20.00	Import
11/07/2024	33884	6F2 Recycled	20.00	Import
11/07/2024	33885	6F2 Recycled	20.00	Import
11/07/2024	33886	6F2 Recycled	20.00	Import
11/07/2024	33944	6F2 Recycled	20.00	Import

11/07/2024	33945	6F2 Recycled	20.00	Import
11/07/2024	33946	6F2 Recycled	20.00	Import
11/07/2024	33947	6F2 Recycled	20.00	Import
11/07/2024	33948	6F2 Recycled	20.00	Import
11/07/2024	33949	6F2 Recycled	20.00	Import
11/07/2024	33950	6F2 Recycled	20.00	Import
11/07/2024	33951	6F2 Recycled	20.00	Import
11/07/2024	33952	6F2 Recycled	20.00	Import
12/07/2024	32302	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
12/07/2024	32303	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
12/07/2024	32304	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
12/07/2024	32311	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
12/07/2024	32313	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
12/07/2024	32314	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
12/07/2024	32864	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
12/07/2024	32865	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
12/07/2024	32866	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
12/07/2024	32868	Hazardous Soils – Elevated Hydrocarbons	19.94	Export
12/07/2024	33692	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
12/07/2024	33693	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
12/07/2024	33694	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
12/07/2024	33695	Rejected Load	18.40	Export
12/07/2024	33696	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
12/07/2024	33697	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
12/07/2024	33698	Rejected Load	18.40	Export
12/07/2024	33699	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
12/07/2024	33700	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
12/07/2024	34039	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
12/07/2024	34072	Rejected Load	18.50	Export
12/07/2024	34085	6F2 Recycled	20.00	Import
12/07/2024	34086	6F2 Recycled	19.82	Import
12/07/2024	34087	6F2 Recycled	20.00	Import
12/07/2024	34088	6F2 Recycled	20.00	Import
12/07/2024	34089	6F2 Recycled	20.00	Import
12/07/2024	34090	6F2 Recycled	20.00	Import
12/07/2024	34091	6F2 Recycled	18.56	Import
12/07/2024	34092	6F2 Recycled	20.00	Import
12/07/2024	34093	6F2 Recycled	20.00	Import
12/07/2024	34094	6F2 Recycled	20.00	Import
12/07/2024	34104	6F2 Recycled	19.78	Import
12/07/2024	34113	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
12/07/2024	34265	Returned Rejected Load	18.50	Export
12/07/2024	34266	Returned Rejected Load	18.40	Export
12/07/2024	34267	Returned Rejected Load	18.40	Export
15/07/2024	34095	6F2 Recycled	20.00	Import
15/07/2024	34096	6F2 Recycled	19.04	Import
15/07/2024	34097	6F2 Recycled	19.04	Import
15/07/2024	34098	6F2 Recycled	18.44	Import
15/07/2024	34099	6F2 Recycled	19.22	Import
15/07/2024	34100	6F2 Recycled	19.26	Import
15/07/2024	34101	6F2 Recycled	20.00	Import
15/07/2024	34102	6F2 Recycled	20.00	Import
15/07/2024	34166	Hazardous Soils – Elevated Hydrocarbons	18.92	Export

15/07/2024	34167	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
15/07/2024	34168	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
15/07/2024	34169	Hazardous Soils – Elevated Hydrocarbons	19.08	Export
15/07/2024	34170	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
15/07/2024	34171	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
15/07/2024	34172	Hazardous Soils – Elevated Hydrocarbons	20.36	Export
15/07/2024	34173	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
15/07/2024	34174	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
15/07/2024	34175	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
15/07/2024	34176	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
15/07/2024	34177	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
15/07/2024	34178	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
15/07/2024	34179	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
15/07/2024	34180	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
15/07/2024	34181	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
15/07/2024	34182	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
15/07/2024	34183	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
15/07/2024	34184	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
15/07/2024	34185	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
15/07/2024	34262	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
15/07/2024	34311	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
15/07/2024	34312	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
15/07/2024	34313	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
16/07/2024	34399	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
16/07/2024	34400	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
16/07/2024	34401	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
16/07/2024	34402	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
16/07/2024	34403	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
16/07/2024	34404	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
16/07/2024	34405	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
16/07/2024	34406	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
16/07/2024	34407	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
16/07/2024	34408	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
16/07/2024	34409	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
16/07/2024	34410	Hazardous Soils – Elevated Hydrocarbons	20.40	Export
16/07/2024	34411	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
16/07/2024	34412	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
16/07/2024	34466	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
16/07/2024	34468	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
16/07/2024	34470	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
16/07/2024	34506	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
17/07/2024	34463	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
17/07/2024	34465	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
17/07/2024	34527	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
17/07/2024	34528	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
17/07/2024	34529	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
17/07/2024	34530	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
17/07/2024	34531	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
17/07/2024	34532	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
17/07/2024	34533	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
17/07/2024	34534	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
17/07/2024	34535	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
17/07/2024	34536	Hazardous Soils – Elevated Hydrocarbons	18.96	Export

17/07/2024	34537	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
17/07/2024	34538	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
18/07/2024	34103	6F2 Recycled	20.00	Import
18/07/2024	34558	6F2 Recycled	20.00	Import
18/07/2024	34559	6F2 Recycled	20.00	Import
18/07/2024	34560	6F2 Recycled	20.00	Import
18/07/2024	34561	6F2 Recycled	20.00	Import
18/07/2024	34562	6F2 Recycled	20.00	Import
18/07/2024	34563	6F2 Recycled	18.50	Import
18/07/2024	34564	6F2 Recycled	18.50	Import
18/07/2024	34565	6F2 Recycled	18.56	Import
18/07/2024	34566	6F2 Recycled	18.70	Import
18/07/2024	34567	6F2 Recycled	18.80	Import
18/07/2024	34568	6F2 Recycled	18.75	Import
18/07/2024	34569	6F2 Recycled	20.00	Import
18/07/2024	34570	6F2 Recycled	20.00	Import
18/07/2024	34571	6F2 Recycled	20.00	Import
18/07/2024	34572	6F2 Recycled	20.00	Import
18/07/2024	34573	6F2 Recycled	20.00	Import
18/07/2024	34574	6F2 Recycled	20.00	Import
18/07/2024	34922	6F2 Recycled	20.00	Import
18/07/2024	34923	6F2 Recycled	18.75	Import
19/07/2024	34877	6F2 Recycled	18.75	Import
19/07/2024	34878	6F2 Recycled	18.75	Import
19/07/2024	34879	6F2 Recycled	18.80	Import
19/07/2024	34880	6F2 Recycled	18.90	Import
19/07/2024	34881	6F2 Recycled	18.80	Import
19/07/2024	34882	6F2 Recycled	18.85	Import
19/07/2024	34883	6F2 Recycled	20.00	Import
19/07/2024	34884	6F2 Recycled	20.00	Import
19/07/2024	34885	6F2 Recycled	20.00	Import
19/07/2024	34886	6F2 Recycled	20.00	Import
19/07/2024	34887	6F2 Recycled	20.00	Import
19/07/2024	34888	6F2 Recycled	20.00	Import
19/07/2024	34914	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
19/07/2024	34915	Hazardous Soils – Elevated Hydrocarbons	19.68	Export
19/07/2024	34916	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
19/07/2024	34917	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
19/07/2024	34918	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
19/07/2024	34919	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
19/07/2024	34924	6F2 Recycled	20.00	Import
22/07/2024	35170	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
22/07/2024	35171	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
22/07/2024	35173	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
22/07/2024	35174	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/07/2024	35175	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
22/07/2024	35176	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
22/07/2024	35177	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
22/07/2024	35178	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
23/07/2024	35172	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
23/07/2024	35179	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
23/07/2024	35180	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
23/07/2024	35181	Hazardous Soils – Elevated Hydrocarbons	18.66	Export

25/07/2024	35087	6F2 Recycled	19.84	Import
25/07/2024	35088	6F2 Recycled	19.82	Import
25/07/2024	35089	6F2 Recycled	18.75	Import
25/07/2024	35090	6F2 Recycled	19.50	Import
25/07/2024	35091	6F2 Recycled	19.80	Import
25/07/2024	35367	6F2 Recycled	20.00	Import
25/07/2024	35600	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
25/07/2024	35601	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
25/07/2024	35602	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
25/07/2024	35869	6F2 Recycled	19.70	Import
25/07/2024	35870	6F2 Recycled	19.04	Import
25/07/2024	35871	6F2 Recycled	20.00	Import
25/07/2024	35872	6F2 Recycled	19.04	Import
25/07/2024	35873	6F2 Recycled	19.04	Import
25/07/2024	35874	6F2 Recycled	19.58	Import
25/07/2024	35875	6F2 Recycled	19.04	Import
25/07/2024	35876	6F2 Recycled	19.80	Import
25/07/2024	35877	6F2 Recycled	19.84	Import
31/07/2024	35986	Haz Soils Asbestos Offsite	19.20	Export
31/07/2024	36252	Haz Soils Asbestos Offsite	19.44	Export
31/07/2024	36253	Haz Soils Asbestos Offsite	19.78	Export
31/07/2024	36254	Haz Soils Asbestos Offsite	19.76	Export
31/07/2024	36255	Haz Soils Asbestos Offsite	19.00	Export
31/07/2024	36256	Haz Soils Asbestos Offsite	20.20	Export
01/08/2024	36257	Haz Soils Asbestos Offsite	19.22	Export
01/08/2024	36258	Haz Soils Asbestos Offsite	14.26	Export
01/08/2024	36259	Haz Soils Asbestos Offsite	19.22	Export
01/08/2024	36260	Haz Soils Asbestos Offsite	19.30	Export
01/08/2024	36261	Haz Soils Asbestos Offsite	18.88	Export
01/08/2024	36262	Haz Soils Asbestos Offsite	14.42	Export
06/08/2024	37304	20/40mm Clean Gritstone	18.78	Import
06/08/2024	37309	20/40mm Clean Gritstone	19.50	Import
06/08/2024	37310	20/40mm Clean Gritstone	20.08	Import
06/08/2024	37312	20/40mm Clean Gritstone	19.76	Import
07/08/2024	37311	20/40mm Clean Gritstone	19.54	Import
08/08/2024	37677	Hazardous Soils c/w Mix Waste (17-05-03	19.60	Export
08/08/2024	37678	Hazardous Soils c/w Mix Waste (17-05-03	19.24	Export
08/08/2024	37679	Hazardous Soils c/w Mix Waste (17-05-03	20.20	Export
08/08/2024	37681	Hazardous Soils c/w Mix Waste (17-05-03	19.28	Export
08/08/2024	37684	Hazardous Soils c/w Mix Waste (17-05-03	20.20	Export
08/08/2024	37887	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
08/08/2024	37889	Hazardous Soils c/w Mix Waste (17-05-03	18.58	Export
08/08/2024	37890	Hazardous Soils c/w Mix Waste (17-05-03	18.68	Export
08/08/2024	37892	Hazardous Soils c/w Mix Waste (17-05-03	18.82	Export
08/08/2024	37893	Hazardous Soils c/w Mix Waste (17-05-03	18.92	Export
08/08/2024	37928	20/40mm Clean Gritstone	20.20	Import
08/08/2024	37929	20/40mm Clean Gritstone	19.29	Import
08/08/2024	37930	20/40mm Clean Gritstone	19.44	Import
09/08/2024	37442	Hazardous Soils c/w Mix Waste (17-05-03	18.56	Export
09/08/2024	37676	Hazardous Soils c/w Mix Waste (17-05-03	18.76	Export
09/08/2024	37680	Hazardous Soils c/w Mix Waste (17-05-03	18.96	Export
09/08/2024	37682	Hazardous Soils c/w Mix Waste (17-05-03	18.38	Export
09/08/2024	37888	Hazardous Soils c/w Mix Waste (17-05-03	20.20	Export

09/08/2024	37891	Hazardous Soils c/w Mix Waste (17-05-03	19.02	Export
09/08/2024	37931	20/40mm Clean Gritstone	20.30	Import
09/08/2024	37932	20/40mm Clean Gritstone	20.26	Import
09/08/2024	38037	Hazardous Soils c/w Mix Waste (17-05-03	18.94	Export
12/08/2024	37683	Hazardous Soils c/w Mix Waste (17-05-03	20.14	Export
12/08/2024	38028	Hazardous Soils c/w Mix Waste (17-05-03	19.12	Export
12/08/2024	38030	Hazardous Soils c/w Mix Waste (17-05-03	19.52	Export
12/08/2024	38031	Hazardous Soils c/w Mix Waste (17-05-03	19.04	Export
12/08/2024	38277	Hazardous Soils c/w Mix Waste (17-05-03	18.48	Export
12/08/2024	38278	Hazardous Soils c/w Mix Waste (17-05-03	19.52	Export
12/08/2024	38279	Hazardous Soils c/w Mix Waste (17-05-03	18.96	Export
12/08/2024	38280	Hazardous Soils c/w Mix Waste (17-05-03	19.56	Export
12/08/2024	38470	Tarmac Off Site (17-03-02)	19.00	Export
12/08/2024	38471	Tarmac Off Site (17-03-02)	19.00	Export
13/08/2024	38387	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
13/08/2024	38472	Tarmac Off Site (17-03-02)	19.00	Export
13/08/2024	38473	Tarmac Off Site (17-03-02)	19.00	Export
14/08/2024	38385	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
14/08/2024	38386	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
14/08/2024	38739	Tarmac Off Site (17-03-02)	19.00	Export
14/08/2024	38740	Tarmac Off Site (17-03-02)	19.00	Export
15/08/2024	38712	Fillsand	20.20	Import
15/08/2024	38950	Tarmac Off Site (17-03-02)	19.00	Export
20/08/2024	39505	Fillsand	20.36	Import
30/08/2024	40463	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40464	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40470	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40471	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40473	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40474	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
30/08/2024	40477	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40465	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40466	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40469	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40475	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40701	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40702	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40703	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40704	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40705	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40706	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
02/09/2024	40707	Hazardous Soils c/w Mix Waste (17-05-03	20.00	Export
04/09/2024	40950	1b Fill Material	19.72	Import
04/09/2024	41043	Hazardous Soils c/w Mix Waste (17-05-03	18.00	Export
04/09/2024	41050	1C Fill Material	20.00	Import
05/09/2024	41158	1C Fill Material	19.94	Import
05/09/2024	41159	1C Fill Material	20.00	Import
05/09/2024	41160	1C Fill Material	20.01	Import
05/09/2024	41161	1C Fill Material	19.95	Import
05/09/2024	41162	1C Fill Material	20.00	Import
05/09/2024	41163	1C Fill Material	20.00	Import
05/09/2024	41164	1C Fill Material	19.98	Import
05/09/2024	41165	1C Fill Material	20.00	Import

05/09/2024	41166	1C Fill Material	20.00	Import
05/09/2024	41167	1C Fill Material	20.00	Import
05/09/2024	41168	1C Fill Material	20.00	Import
05/09/2024	41169	1C Fill Material	20.00	Import
05/09/2024	41170	1C Fill Material	20.00	Import
05/09/2024	41171	1C Fill Material	19.87	Import
05/09/2024	41172	1C Fill Material	19.96	Import
05/09/2024	41173	1C Fill Material	20.00	Import
05/09/2024	41174	1C Fill Material	19.95	Import
05/09/2024	41175	1C Fill Material	19.98	Import
05/09/2024	41176	1C Fill Material	19.89	Import
05/09/2024	41177	1C Fill Material	20.00	Import
09/09/2024	41178	1C Fill Material	19.30	Import
09/09/2024	41688	1C Fill Material	20.00	Import
09/09/2024	41689	1C Fill Material	20.00	Import
09/09/2024	41690	1C Fill Material	20.00	Import
09/09/2024	41691	1C Fill Material	20.24	Import
09/09/2024	41692	1C Fill Material	19.42	Import
09/09/2024	41693	1C Fill Material	19.86	Import
09/09/2024	41694	1C Fill Material	19.88	Import
09/09/2024	41695	1C Fill Material	19.80	Import
09/09/2024	41696	1C Fill Material	20.00	Import
09/09/2024	41872	Hazardous Soils cont. Tph & Asbestos	18.60	Export
10/09/2024	41784	1C Fill Material	20.00	Import
10/09/2024	41785	1C Fill Material	20.00	Import
10/09/2024	41786	1C Fill Material	20.44	Import
10/09/2024	41788	1C Fill Material	20.14	Import
10/09/2024	41789	1C Fill Material	20.16	Import
10/09/2024	41790	1C Fill Material	19.74	Import
10/09/2024	41791	1C Fill Material	20.00	Import
10/09/2024	41792	1C Fill Material	19.53	Import
10/09/2024	41793	1C Fill Material	20.20	Import
10/09/2024	41871	Hazardous Soils cont. Tph & Asbestos	19.58	Export
10/09/2024	41874	Hazardous Soils cont. Tph & Asbestos	17.36	Export
11/09/2024	41597	Hazardous Soils cont. Tph & Asbestos	21.22	Export
11/09/2024	41598	Hazardous Soils cont. Tph & Asbestos	19.64	Export
11/09/2024	41599	Hazardous Soils cont. Tph & Asbestos	19.16	Export
11/09/2024	41600	Hazardous Soils cont. Tph & Asbestos	18.64	Export
11/09/2024	41787	1C Fill Material	19.48	Import
11/09/2024	41873	Hazardous Soils cont. Tph & Asbestos	20.18	Export
11/09/2024	42056	1C Fill Material	16.70	Import
11/09/2024	42057	1C Fill Material	18.82	Import
11/09/2024	42058	1C Fill Material	18.44	Import
11/09/2024	42059	1C Fill Material	18.82	Import
11/09/2024	42060	1C Fill Material	18.32	Import
11/09/2024	42061	1C Fill Material	17.82	Import
11/09/2024	42062	1C Fill Material	18.90	Import
11/09/2024	42063	1C Fill Material	18.78	Import
11/09/2024	42064	1C Fill Material	18.92	Import
11/09/2024	42065	1C Fill Material	18.90	Import
11/09/2024	42126	Hazardous Soils cont. Tph & Asbestos	18.04	Export
11/09/2024	42269	150/75mm Clean Gritstone	19.30	Import
11/09/2024	42394	1C Fill Material	18.82	Import

11/09/2024	42409	1C Fill Material	20.00	Import
12/09/2024	42306	1C Fill Material	20.00	Import
12/09/2024	42307	1C Fill Material	20.00	Import
12/09/2024	42308	1C Fill Material	20.00	Import
12/09/2024	42309	1C Fill Material	20.00	Import
12/09/2024	42310	1C Fill Material	20.00	Import
12/09/2024	42311	1C Fill Material	20.00	Import
12/09/2024	42312	1C Fill Material	20.00	Import
12/09/2024	42315	1C Fill Material	20.00	Import
13/09/2024	41742	Hazardous Soils cont. Tph & Asbestos	18.00	Export
13/09/2024	42124	Hazardous Soils cont. Tph & Asbestos	18.94	Export
13/09/2024	42125	Hazardous Soils cont. Tph & Asbestos	19.32	Export
13/09/2024	42313	1C Fill Material	19.84	Import
13/09/2024	42314	1C Fill Material	19.70	Import
13/09/2024	42348	Hazardous Soils cont. Tph & Asbestos	19.60	Export
13/09/2024	42349	Hazardous Soils cont. Tph & Asbestos	19.96	Export
13/09/2024	42350	Hazardous Soils cont. Tph & Asbestos	19.94	Export
13/09/2024	42535	1C Fill Material	19.74	Import
13/09/2024	42536	1C Fill Material	19.24	Import
13/09/2024	42537	1C Fill Material	20.00	Import
13/09/2024	42538	1C Fill Material	20.00	Import
13/09/2024	42539	1C Fill Material	20.00	Import
13/09/2024	42540	1C Fill Material	20.00	Import
13/09/2024	42541	1C Fill Material	19.08	Import
13/09/2024	42542	1C Fill Material	19.16	Import
13/09/2024	42543	1C Fill Material	20.00	Import
13/09/2024	42544	1C Fill Material	20.00	Import
13/09/2024	42545	1C Fill Material	20.00	Import
13/09/2024	42546	1C Fill Material	20.00	Import
13/09/2024	42547	1C Fill Material	19.98	Import
13/09/2024	42548	1C Fill Material	19.94	Import
13/09/2024	42549	1C Fill Material	19.92	Import
13/09/2024	42550	1C Fill Material	19.96	Import
13/09/2024	42551	1C Fill Material	19.96	Import
13/09/2024	42552	1C Fill Material	19.96	Import
13/09/2024	42553	1C Fill Material	19.70	Import
13/09/2024	42554	1C Fill Material	19.60	Import
13/09/2024	42568	Hazardous Soils cont. Tph & Asbestos	19.22	Export
13/09/2024	42573	Hazardous Soils cont. Tph & Asbestos	18.60	Export
13/09/2024	42601	1C Fill Material	19.80	Import
13/09/2024	42602	1C Fill Material	19.60	Import
13/09/2024	42603	1C Fill Material	19.60	Import
13/09/2024	42604	1C Fill Material	19.70	Import
16/09/2024	42570	Hazardous Soils cont. Tph & Asbestos	18.72	Export
16/09/2024	42571	Hazardous Soils cont. Tph & Asbestos	17.94	Export
16/09/2024	42572	Hazardous Soils cont. Tph & Asbestos	19.38	Export
16/09/2024	42574	Hazardous Soils cont. Tph & Asbestos	19.64	Export
16/09/2024	42725	1C Fill Material	19.50	Import
16/09/2024	42726	1C Fill Material	19.60	Import
16/09/2024	42727	1C Fill Material	19.80	Import
16/09/2024	42728	1C Fill Material	20.20	Import
16/09/2024	42729	1C Fill Material	19.70	Import
16/09/2024	42730	1C Fill Material	19.50	Import

16/09/2024	42731	1C Fill Material	19.80	Import
16/09/2024	42732	1C Fill Material	20.00	Import
16/09/2024	42733	1C Fill Material	20.00	Import
16/09/2024	42734	1C Fill Material	20.00	Import
16/09/2024	42735	1C Fill Material	19.98	Import
16/09/2024	42736	1C Fill Material	20.00	Import
16/09/2024	42737	1C Fill Material	20.10	Import
16/09/2024	42738	1C Fill Material	19.50	Import
16/09/2024	42739	1C Fill Material	19.90	Import
16/09/2024	42740	1C Fill Material	19.83	Import
16/09/2024	42741	1C Fill Material	19.97	Import
16/09/2024	42742	1C Fill Material	19.93	Import
16/09/2024	42743	1C Fill Material	19.97	Import
16/09/2024	42744	1C Fill Material	20.00	Import
16/09/2024	43090	1C Fill Material	20.00	Import
16/09/2024	43091	1C Fill Material	20.22	Import
16/09/2024	43105	1C Fill Material	19.70	Import
17/09/2024	42351	Hazardous Soils cont. Tph & Asbestos	19.48	Export
17/09/2024	42562	Hazardous Soils cont. Tph & Asbestos	18.50	Export
17/09/2024	43026	Hazardous Soils cont. Tph & Asbestos	19.42	Export
17/09/2024	43027	Hazardous Soils cont. Tph & Asbestos	19.76	Export
17/09/2024	43028	Hazardous Soils cont. Tph & Asbestos	18.64	Export
17/09/2024	43061	1C Fill Material	19.98	Import
17/09/2024	43062	1C Fill Material	19.94	Import
17/09/2024	43063	1C Fill Material	19.98	Import
17/09/2024	43064	1C Fill Material	19.98	Import
17/09/2024	43065	1C Fill Material	19.96	Import
17/09/2024	43066	1C Fill Material	19.92	Import
17/09/2024	43067	1C Fill Material	19.94	Import
17/09/2024	43068	1C Fill Material	19.80	Import
17/09/2024	43069	1C Fill Material	19.70	Import
17/09/2024	43070	1C Fill Material	19.60	Import
17/09/2024	43071	1C Fill Material	19.70	Import
17/09/2024	43072	1C Fill Material	19.60	Import
17/09/2024	43073	1C Fill Material	19.70	Import
17/09/2024	43074	1C Fill Material	19.50	Import
17/09/2024	43075	1C Fill Material	20.00	Import
17/09/2024	43076	1C Fill Material	19.80	Import
17/09/2024	43077	1C Fill Material	19.80	Import
17/09/2024	43078	1C Fill Material	20.00	Import
17/09/2024	43079	1C Fill Material	20.30	Import
17/09/2024	43080	1C Fill Material	19.60	Import
17/09/2024	43081	1C Fill Material	20.20	Import
17/09/2024	43082	1C Fill Material	20.00	Import
17/09/2024	43083	1C Fill Material	20.10	Import
17/09/2024	43124	150/75mm Clean Gritstone	20.00	Import
17/09/2024	43234	1C Fill Material	19.90	Import
17/09/2024	43235	1C Fill Material	19.80	Import
17/09/2024	43236	1C Fill Material	20.00	Import
18/09/2024	43237	1C Fill Material	19.82	Import
18/09/2024	43238	1C Fill Material	19.90	Import
18/09/2024	43239	1C Fill Material	19.68	Import
18/09/2024	43240	1C Fill Material	20.00	Import

18/09/2024	43241	1C Fill Material	19.80	Import
18/09/2024	43242	1C Fill Material	19.90	Import
18/09/2024	43243	1C Fill Material	19.80	Import
18/09/2024	43244	1C Fill Material	19.80	Import
18/09/2024	43245	1C Fill Material	19.90	Import
18/09/2024	43246	1C Fill Material	19.70	Import
18/09/2024	43247	1C Fill Material	20.00	Import
18/09/2024	43248	1C Fill Material	19.90	Import
18/09/2024	43249	1C Fill Material	19.80	Import
18/09/2024	43250	1C Fill Material	20.00	Import
18/09/2024	43251	1C Fill Material	19.80	Import
18/09/2024	43252	1C Fill Material	20.00	Import
18/09/2024	43253	1C Fill Material	19.80	Import
18/09/2024	43297	Hazardous Soils cont. Tph & Asbestos	18.50	Export
18/09/2024	43298	Hazardous Soils cont. Tph & Asbestos	17.60	Export
18/09/2024	43299	Hazardous Soils cont. Tph & Asbestos	18.34	Export
18/09/2024	43300	Hazardous Soils cont. Tph & Asbestos	18.54	Export
18/09/2024	43302	Hazardous Soils cont. Tph & Asbestos	19.22	Export
19/09/2024	43481	1C Fill Material	19.66	Import
19/09/2024	43482	1C Fill Material	20.40	Import
19/09/2024	43485	1C Fill Material	20.30	Import
19/09/2024	43486	1C Fill Material	20.00	Import
19/09/2024	43487	1C Fill Material	19.80	Import
19/09/2024	43488	1C Fill Material	19.90	Import
19/09/2024	43489	1C Fill Material	19.70	Import
19/09/2024	43490	1C Fill Material	19.80	Import
19/09/2024	43491	1C Fill Material	19.80	Import
19/09/2024	43492	1C Fill Material	19.80	Import
19/09/2024	43493	1C Fill Material	19.90	Import
19/09/2024	43494	1C Fill Material	19.80	Import
19/09/2024	43495	1C Fill Material	19.70	Import
19/09/2024	43496	1C Fill Material	20.00	Import
19/09/2024	43497	1C Fill Material	19.90	Import
19/09/2024	43498	1C Fill Material	20.00	Import
19/09/2024	43499	1C Fill Material	19.80	Import
19/09/2024	43500	1C Fill Material	20.00	Import
19/09/2024	43578	Hazardous Soils cont. Tph & Asbestos	18.92	Export
19/09/2024	43579	Hazardous Soils cont. Tph & Asbestos	18.12	Export
19/09/2024	43580	Hazardous Soils cont. Tph & Asbestos	17.70	Export
19/09/2024	43581	Hazardous Soils cont. Tph & Asbestos	19.08	Export
19/09/2024	43582	Hazardous Soils cont. Tph & Asbestos	19.56	Export
20/09/2024	43303	Hazardous Soils cont. Tph & Asbestos	19.10	Export
20/09/2024	43304	Hazardous Soils cont. Tph & Asbestos	19.50	Export
20/09/2024	43753	Hazardous Soils cont. Tph & Asbestos	17.94	Export
20/09/2024	43754	Hazardous Soils cont. Tph & Asbestos	17.46	Export
20/09/2024	43755	Hazardous Soils cont. Tph & Asbestos	16.70	Export
20/09/2024	43756	Hazardous Soils cont. Tph & Asbestos	18.20	Export
20/09/2024	43757	Hazardous Soils cont. Tph & Asbestos	18.50	Export
20/09/2024	43759	Hazardous Soils cont. Tph & Asbestos	18.62	Export
20/09/2024	43760	Hazardous Soils cont. Tph & Asbestos	18.26	Export
20/09/2024	43761	Hazardous Soils cont. Tph & Asbestos	18.94	Export
20/09/2024	43762	Hazardous Soils cont. Tph & Asbestos	18.74	Export
23/09/2024	43301	Hazardous Soils cont. Tph & Asbestos	19.84	Export

23/09/2024	43758	Hazardous Soils cont. Tph & Asbestos	18.80	Export
23/09/2024	43800	1C Fill Material	20.00	Import
23/09/2024	43892	1C Fill Material	20.00	Import
23/09/2024	43895	1C Fill Material	20.00	Import
23/09/2024	43896	1C Fill Material	20.00	Import
23/09/2024	43897	1C Fill Material	20.00	Import
23/09/2024	43898	1C Fill Material	20.00	Import
23/09/2024	43899	1C Fill Material	20.00	Import
23/09/2024	43900	1C Fill Material	20.00	Import
23/09/2024	43901	1C Fill Material	20.00	Import
23/09/2024	43902	1C Fill Material	20.00	Import
23/09/2024	43907	1C Fill Material	20.00	Import
23/09/2024	43908	1C Fill Material	20.00	Import
23/09/2024	43909	1C Fill Material	20.00	Import
23/09/2024	43910	1C Fill Material	19.38	Import
23/09/2024	43911	1C Fill Material	19.84	Import
23/09/2024	43912	1C Fill Material	20.00	Import
23/09/2024	43913	1C Fill Material	20.00	Import
23/09/2024	43914	1C Fill Material	20.00	Import
23/09/2024	43934	Hazardous Soils cont. Tph & Asbestos	18.32	Export
23/09/2024	43935	Hazardous Soils cont. Tph & Asbestos	17.96	Export
23/09/2024	43936	Hazardous Soils cont. Tph & Asbestos	16.42	Export
23/09/2024	43937	Hazardous Soils cont. Tph & Asbestos	15.96	Export
23/09/2024	43938	Hazardous Soils cont. Tph & Asbestos	18.08	Export
23/09/2024	43939	Hazardous Soils cont. Tph & Asbestos	19.02	Export
23/09/2024	43940	Hazardous Soils cont. Tph & Asbestos	19.24	Export
23/09/2024	43941	Hazardous Soils cont. Tph & Asbestos	20.44	Export
23/09/2024	43942	Hazardous Soils cont. Tph & Asbestos	18.68	Export
23/09/2024	43943	Hazardous Soils cont. Tph & Asbestos	19.28	Export
23/09/2024	43951	Hazardous Soils cont. Tph & Asbestos	19.60	Export
23/09/2024	43954	Hazardous Soils cont. Tph & Asbestos	18.92	Export
24/09/2024	43893	1C Fill Material	20.00	Import
24/09/2024	43894	1C Fill Material	20.00	Import
24/09/2024	43952	Hazardous Soils cont. Tph & Asbestos	18.16	Export
24/09/2024	43953	Hazardous Soils cont. Tph & Asbestos	19.22	Export
24/09/2024	43955	Hazardous Soils cont. Tph & Asbestos	18.16	Export
24/09/2024	43956	Hazardous Soils cont. Tph & Asbestos	18.40	Export
24/09/2024	43999	Hazardous Soils cont. Tph & Asbestos	19.58	Export
24/09/2024	44000	Hazardous Soils cont. Tph & Asbestos	17.16	Export
24/09/2024	44001	Hazardous Soils cont. Tph & Asbestos	20.18	Export
24/09/2024	44002	Hazardous Soils cont. Tph & Asbestos	10.74	Export
24/09/2024	44003	Hazardous Soils cont. Tph & Asbestos	18.84	Export
24/09/2024	44006	Hazardous Soils cont. Tph & Asbestos	20.02	Export
24/09/2024	44007	Hazardous Soils cont. Tph & Asbestos	20.62	Export
24/09/2024	44008	Hazardous Soils cont. Tph & Asbestos	18.04	Export
24/09/2024	44095	1C Fill Material	20.00	Import
24/09/2024	44096	1C Fill Material	20.00	Import
24/09/2024	44097	1C Fill Material	20.00	Import
24/09/2024	44098	1C Fill Material	19.98	Import
24/09/2024	44114	1C Fill Material	20.00	Import
25/09/2024	44255	1C Fill Material	20.10	Import
25/09/2024	44257	1C Fill Material	19.64	Import
25/09/2024	44258	1C Fill Material	20.00	Import

25/09/2024	44259	1C Fill Material	20.00	Import
25/09/2024	44260	1C Fill Material	19.90	Import
25/09/2024	44261	1C Fill Material	19.92	Import
25/09/2024	44262	1C Fill Material	19.96	Import
25/09/2024	44263	1C Fill Material	19.02	Import
25/09/2024	44264	1C Fill Material	19.92	Import
25/09/2024	44265	1C Fill Material	19.88	Import
25/09/2024	44266	1C Fill Material	19.94	Import
25/09/2024	44267	1C Fill Material	19.98	Import
25/09/2024	44268	1C Fill Material	19.80	Import
25/09/2024	44269	1C Fill Material	19.70	Import
25/09/2024	44270	1C Fill Material	19.60	Import
25/09/2024	44271	1C Fill Material	19.80	Import
25/09/2024	44272	1C Fill Material	19.60	Import
25/09/2024	44273	1C Fill Material	19.80	Import
25/09/2024	44274	1C Fill Material	19.70	Import
26/09/2024	44456	1C Fill Material	20.30	Import
26/09/2024	44457	1C Fill Material	20.50	Import
26/09/2024	44458	1C Fill Material	20.50	Import
26/09/2024	44460	1C Fill Material	20.00	Import
26/09/2024	44461	1C Fill Material	19.92	Import
26/09/2024	44462	1C Fill Material	20.00	Import
26/09/2024	44463	1C Fill Material	19.90	Import
26/09/2024	44464	1C Fill Material	20.00	Import
26/09/2024	44465	1C Fill Material	19.90	Import
26/09/2024	44466	1C Fill Material	20.00	Import
26/09/2024	44467	1C Fill Material	19.90	Import
26/09/2024	44468	1C Fill Material	20.00	Import
26/09/2024	44469	1C Fill Material	20.00	Import
26/09/2024	44470	1C Fill Material	19.90	Import
26/09/2024	44471	1C Fill Material	19.80	Import
26/09/2024	44472	1C Fill Material	20.00	Import
26/09/2024	44473	1C Fill Material	20.00	Import
26/09/2024	44474	1C Fill Material	19.80	Import
26/09/2024	44475	1C Fill Material	19.90	Import
26/09/2024	44573	1C Fill Material	20.00	Import
26/09/2024	44574	1C Fill Material	20.00	Import
26/09/2024	44575	1C Fill Material	20.00	Import
26/09/2024	44576	1C Fill Material	20.00	Import
26/09/2024	44577	1C Fill Material	20.00	Import
26/09/2024	44578	1C Fill Material	19.92	Import
27/09/2024	44459	1C Fill Material	18.80	Import
27/09/2024	44579	1C Fill Material	19.54	Import
27/09/2024	44616	1C Fill Material	19.90	Import
27/09/2024	44617	1C Fill Material	20.00	Import
27/09/2024	44618	1C Fill Material	20.00	Import
27/09/2024	44619	1C Fill Material	20.00	Import
27/09/2024	44620	1C Fill Material	19.90	Import
27/09/2024	44621	1C Fill Material	19.90	Import
27/09/2024	44622	1C Fill Material	19.90	Import
27/09/2024	44623	1C Fill Material	19.80	Import
27/09/2024	44624	1C Fill Material	19.90	Import
27/09/2024	44625	1C Fill Material	19.80	Import

27/09/2024	44626	1C Fill Material	19.90	Import
27/09/2024	44627	1C Fill Material	19.90	Import
27/09/2024	44628	1C Fill Material	19.90	Import
27/09/2024	44629	1C Fill Material	19.92	Import
27/09/2024	44630	1C Fill Material	19.96	Import
27/09/2024	44631	1C Fill Material	19.96	Import
27/09/2024	44632	1C Fill Material	19.98	Import
27/09/2024	44633	1C Fill Material	19.92	Import
27/09/2024	44634	1C Fill Material	19.94	Import
30/09/2024	44816	1C Fill Material	20.20	Import
30/09/2024	44817	1C Fill Material	20.00	Import
30/09/2024	44818	1C Fill Material	20.18	Import
30/09/2024	44819	1C Fill Material	19.36	Import
30/09/2024	44820	1C Fill Material	19.86	Import
30/09/2024	44821	1C Fill Material	20.10	Import
30/09/2024	44822	1C Fill Material	19.86	Import
30/09/2024	44823	1C Fill Material	19.92	Import
30/09/2024	44824	1C Fill Material	19.92	Import
30/09/2024	44825	1C Fill Material	19.98	Import
30/09/2024	44826	1C Fill Material	20.00	Import
30/09/2024	44827	1C Fill Material	20.00	Import
30/09/2024	44828	1C Fill Material	20.00	Import
30/09/2024	44829	1C Fill Material	19.16	Import
30/09/2024	44830	1C Fill Material	20.00	Import
30/09/2024	44831	1C Fill Material	20.00	Import
30/09/2024	44832	1C Fill Material	20.00	Import
30/09/2024	44833	1C Fill Material	19.00	Import
30/09/2024	44834	1C Fill Material	20.10	Import
30/09/2024	44835	1C Fill Material	20.00	Import
30/09/2024	44836	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
30/09/2024	44837	Hazardous Soils – Elevated Hydrocarbons	20.16	Export
30/09/2024	44838	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
30/09/2024	44839	Hazardous Soils – Elevated Hydrocarbons	17.90	Export
30/09/2024	44840	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
30/09/2024	44841	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
30/09/2024	44842	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
30/09/2024	44843	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
30/09/2024	44845	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
30/09/2024	44846	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
30/09/2024	44847	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
30/09/2024	45206	1C Fill Material	18.92	Import
01/10/2024	44580	Cable Sand Enats 97-01	18.40	Import
01/10/2024	44844	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
01/10/2024	45125	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
01/10/2024	45126	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
01/10/2024	45127	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
01/10/2024	45128	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
01/10/2024	45129	Hazardous Soils – Elevated Hydrocarbons	17.76	Export
01/10/2024	45130	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
01/10/2024	45131	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
01/10/2024	45132	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
01/10/2024	45134	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
01/10/2024	45135	Hazardous Soils – Elevated Hydrocarbons	19.16	Export

01/10/2024	45136	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
01/10/2024	45137	1C Fill Material	18.82	Import
01/10/2024	45138	1C Fill Material	18.82	Import
01/10/2024	45139	1C Fill Material	18.82	Import
01/10/2024	45140	1C Fill Material	18.82	Import
01/10/2024	45141	1C Fill Material	18.82	Import
01/10/2024	45142	1C Fill Material	18.46	Import
01/10/2024	45143	1C Fill Material	19.90	Import
01/10/2024	45144	1C Fill Material	19.93	Import
01/10/2024	45145	1C Fill Material	19.92	Import
01/10/2024	45146	1C Fill Material	19.50	Import
01/10/2024	45147	1C Fill Material	19.61	Import
01/10/2024	45148	1C Fill Material	19.86	Import
01/10/2024	45149	1C Fill Material	19.74	Import
01/10/2024	45150	1C Fill Material	20.12	Import
01/10/2024	45151	1C Fill Material	19.99	Import
01/10/2024	45153	1C Fill Material	19.56	Import
01/10/2024	45154	1C Fill Material	19.86	Import
01/10/2024	45155	1C Fill Material	19.70	Import
01/10/2024	45156	1C Fill Material	20.00	Import
01/10/2024	45157	1C Fill Material	18.54	Import
01/10/2024	45158	1C Fill Material	17.96	Import
01/10/2024	45159	1C Fill Material	20.00	Import
01/10/2024	45160	1C Fill Material	20.00	Import
01/10/2024	45161	1C Fill Material	18.70	Import
01/10/2024	45207	1C Fill Material	17.42	Import
01/10/2024	45239	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
01/10/2024	45240	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
01/10/2024	45241	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
02/10/2024	45133	Hazardous Soils – Elevated Hydrocarbons	19.54	Export
02/10/2024	45242	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
02/10/2024	45316	1C Fill Material	20.00	Import
02/10/2024	45317	1C Fill Material	20.00	Import
02/10/2024	45318	1C Fill Material	20.00	Import
02/10/2024	45319	1C Fill Material	20.00	Import
02/10/2024	45320	1C Fill Material	20.00	Import
02/10/2024	45321	1C Fill Material	20.00	Import
02/10/2024	45323	1C Fill Material	19.50	Import
02/10/2024	45324	1C Fill Material	19.14	Import
02/10/2024	45325	1C Fill Material	19.50	Import
02/10/2024	45326	1C Fill Material	19.22	Import
02/10/2024	45327	1C Fill Material	19.40	Import
02/10/2024	45328	1C Fill Material	18.96	Import
02/10/2024	45339	1C Fill Material	20.00	Import
02/10/2024	45340	1C Fill Material	19.38	Import
02/10/2024	45341	1C Fill Material	20.10	Import
02/10/2024	45342	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
02/10/2024	45343	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
02/10/2024	45345	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
02/10/2024	45346	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
02/10/2024	45347	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
02/10/2024	45348	Hazardous Soils – Elevated Hydrocarbons	19.95	Export
02/10/2024	45349	Hazardous Soils – Elevated Hydrocarbons	19.44	Export

02/10/2024	45382	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
02/10/2024	45383	Hazardous Soils – Elevated Hydrocarbons	17.60	Export
03/10/2024	45344	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
03/10/2024	45350	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
03/10/2024	45384	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
03/10/2024	45431	2C Fill Material	19.08	Import
03/10/2024	45432	2C Fill Material	19.00	Import
03/10/2024	45433	2C Fill Material	18.98	Import
03/10/2024	45434	2C Fill Material	18.78	Import
03/10/2024	45435	2C Fill Material	19.30	Import
03/10/2024	45436	2C Fill Material	18.66	Import
03/10/2024	45437	2C Fill Material	19.02	Import
03/10/2024	45438	2C Fill Material	17.44	Import
03/10/2024	45439	2C Fill Material	20.00	Import
03/10/2024	45440	2C Fill Material	17.12	Import
03/10/2024	45441	2C Fill Material	19.22	Import
03/10/2024	45442	2C Fill Material	19.12	Import
03/10/2024	45443	2C Fill Material	19.30	Import
03/10/2024	45444	2C Fill Material	17.04	Import
03/10/2024	45445	2C Fill Material	17.98	Import
03/10/2024	45446	2C Fill Material	17.76	Import
03/10/2024	45447	2C Fill Material	17.46	Import
03/10/2024	45448	2C Fill Material	18.38	Import
03/10/2024	45450	2C Fill Material	19.54	Import
03/10/2024	45524	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
03/10/2024	45525	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
03/10/2024	45526	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
03/10/2024	45527	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
03/10/2024	45528	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
03/10/2024	45529	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
03/10/2024	45530	Hazardous Soils – Elevated Hydrocarbons	22.90	Export
03/10/2024	45531	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
03/10/2024	45532	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
03/10/2024	45533	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
03/10/2024	45534	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
03/10/2024	45535	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
03/10/2024	45669	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
03/10/2024	45670	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
03/10/2024	45671	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
03/10/2024	45780	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
04/10/2024	45449	2C Fill Material	17.04	Import
04/10/2024	45668	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
04/10/2024	45685	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
04/10/2024	45686	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
04/10/2024	45687	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
04/10/2024	45698	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
04/10/2024	45699	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
04/10/2024	45700	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
04/10/2024	45702	Hazardous Soils – Elevated Hydrocarbons	19.14	Export
04/10/2024	45704	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
04/10/2024	45705	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
04/10/2024	45706	Hazardous Soils – Elevated Hydrocarbons	17.10	Export
07/10/2024	45900	Hazardous Soils – Elevated Hydrocarbons	19.36	Export

07/10/2024	45901	Hazardous Soils – Elevated Hydrocarbons	18.56	Export
07/10/2024	45902	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
07/10/2024	45903	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
07/10/2024	45904	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
07/10/2024	45905	Hazardous Soils – Elevated Hydrocarbons	17.64	Export
07/10/2024	45906	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
07/10/2024	45907	Hazardous Soils – Elevated Hydrocarbons	16.94	Export
07/10/2024	45908	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
07/10/2024	45909	Hazardous Soils – Elevated Hydrocarbons	16.74	Export
07/10/2024	45910	Hazardous Soils – Elevated Hydrocarbons	17.20	Export
07/10/2024	45911	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
07/10/2024	45912	Hazardous Soils – Elevated Hydrocarbons	20.58	Export
07/10/2024	45913	Hazardous Soils – Elevated Hydrocarbons	16.66	Export
07/10/2024	45914	Hazardous Soils – Elevated Hydrocarbons	17.62	Export
07/10/2024	45915	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
07/10/2024	45916	Hazardous Soils – Elevated Hydrocarbons	16.40	Export
07/10/2024	45917	Hazardous Soils – Elevated Hydrocarbons	17.16	Export
07/10/2024	45918	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
07/10/2024	45919	Hazardous Soils – Elevated Hydrocarbons	16.78	Export
07/10/2024	46204	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
07/10/2024	46205	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
08/10/2024	46081	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
08/10/2024	46082	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
08/10/2024	46085	Hazardous Soils – Elevated Hydrocarbons	17.74	Export
08/10/2024	46086	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
08/10/2024	46087	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
08/10/2024	46088	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
08/10/2024	46089	Hazardous Soils – Elevated Hydrocarbons	17.90	Export
08/10/2024	46090	Hazardous Soils – Elevated Hydrocarbons	16.66	Export
08/10/2024	46091	Hazardous Soils – Elevated Hydrocarbons	17.30	Export
08/10/2024	46092	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
08/10/2024	46093	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
08/10/2024	46094	Hazardous Soils – Elevated Hydrocarbons	17.24	Export
08/10/2024	46095	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
08/10/2024	46096	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
08/10/2024	46097	Hazardous Soils – Elevated Hydrocarbons	18.80	Export
08/10/2024	46098	Hazardous Soils – Elevated Hydrocarbons	18.50	Export
08/10/2024	46099	Hazardous Soils – Elevated Hydrocarbons	15.64	Export
08/10/2024	46100	Hazardous Soils – Elevated Hydrocarbons	16.16	Export
08/10/2024	46243	6F2 Recycled	20.00	Import
08/10/2024	46244	6F2 Recycled	20.00	Import
08/10/2024	46245	6F2 Recycled	20.00	Import
08/10/2024	46266	Fillsand	19.60	Import
09/10/2024	46329	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
09/10/2024	46330	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
09/10/2024	46333	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
09/10/2024	46334	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
09/10/2024	46335	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
09/10/2024	46336	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
09/10/2024	46337	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
09/10/2024	46338	Hazardous Soils – Elevated Hydrocarbons	13.72	Export
09/10/2024	46339	Hazardous Soils – Elevated Hydrocarbons	16.64	Export
09/10/2024	46340	Hazardous Soils – Elevated Hydrocarbons	19.98	Export

09/10/2024	46341	Hazardous Soils – Elevated Hydrocarbons	18.24	Export
09/10/2024	46342	Hazardous Soils – Elevated Hydrocarbons	16.56	Export
09/10/2024	46343	Hazardous Soils – Elevated Hydrocarbons	17.42	Export
09/10/2024	46344	Hazardous Soils – Elevated Hydrocarbons	17.94	Export
09/10/2024	46345	Hazardous Soils – Elevated Hydrocarbons	17.62	Export
09/10/2024	46346	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
09/10/2024	46347	Hazardous Soils – Elevated Hydrocarbons	17.64	Export
09/10/2024	46348	Hazardous Soils – Elevated Hydrocarbons	16.80	Export
09/10/2024	46489	6F2 Recycled	19.40	Import
10/10/2024	46332	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
10/10/2024	46544	Hazardous Soils – Elevated Hydrocarbons	16.10	Export
10/10/2024	46545	Hazardous Soils – Elevated Hydrocarbons	17.94	Export
10/10/2024	46546	Hazardous Soils – Elevated Hydrocarbons	21.94	Export
10/10/2024	46547	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
10/10/2024	46548	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
10/10/2024	46549	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
10/10/2024	46550	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
10/10/2024	46551	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
10/10/2024	46552	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
10/10/2024	46553	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
10/10/2024	46554	Hazardous Soils – Elevated Hydrocarbons	16.44	Export
10/10/2024	46555	Hazardous Soils – Elevated Hydrocarbons	17.68	Export
10/10/2024	46556	Hazardous Soils – Elevated Hydrocarbons	18.74	Export
10/10/2024	46557	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
11/10/2024	46734	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
11/10/2024	46735	Hazardous Soils – Elevated Hydrocarbons	20.34	Export
11/10/2024	46736	Hazardous Soils – Elevated Hydrocarbons	16.94	Export
11/10/2024	46737	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
11/10/2024	46738	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
11/10/2024	46739	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
11/10/2024	46740	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
11/10/2024	46741	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
11/10/2024	46742	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
11/10/2024	46743	Hazardous Soils – Elevated Hydrocarbons	22.04	Export
11/10/2024	46744	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
11/10/2024	46745	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
11/10/2024	46746	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
11/10/2024	46747	Hazardous Soils – Elevated Hydrocarbons	19.40	Export
11/10/2024	46748	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
11/10/2024	46749	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
11/10/2024	46750	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
11/10/2024	46751	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
11/10/2024	46752	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
11/10/2024	46753	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
11/10/2024	46992	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
11/10/2024	46993	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
14/10/2024	46925	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
14/10/2024	46926	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
14/10/2024	46927	Hazardous Soils – Elevated Hydrocarbons	19.26	Export
14/10/2024	46928	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
14/10/2024	46929	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
14/10/2024	46930	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
14/10/2024	46931	Hazardous Soils – Elevated Hydrocarbons	20.28	Export

14/10/2024	46932	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
14/10/2024	46933	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
14/10/2024	46934	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
14/10/2024	46935	Hazardous Soils – Elevated Hydrocarbons	17.34	Export
14/10/2024	46936	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
14/10/2024	46937	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
14/10/2024	46938	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
14/10/2024	46939	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
14/10/2024	46940	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
14/10/2024	46941	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
14/10/2024	46942	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
14/10/2024	46943	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
14/10/2024	46944	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
14/10/2024	47040	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
14/10/2024	47041	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
14/10/2024	47042	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
14/10/2024	47043	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
15/10/2024	46246	6F2 Recycled	20.00	Import
15/10/2024	47039	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
15/10/2024	47117	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
15/10/2024	47118	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
15/10/2024	47121	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
15/10/2024	47122	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
15/10/2024	47123	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
15/10/2024	47124	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
15/10/2024	47125	Hazardous Soils – Elevated Hydrocarbons	19.74	Export
15/10/2024	47126	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
15/10/2024	47127	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
15/10/2024	47128	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
15/10/2024	47129	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
15/10/2024	47130	Hazardous Soils – Elevated Hydrocarbons	16.38	Export
15/10/2024	47131	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
15/10/2024	47132	Hazardous Soils – Elevated Hydrocarbons	18.14	Export
15/10/2024	47133	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
15/10/2024	47134	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
15/10/2024	47135	Hazardous Soils – Elevated Hydrocarbons	19.32	Export
15/10/2024	47136	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
15/10/2024	47245	Hazardous Soils – Elevated Hydrocarbons	19.92	Export
15/10/2024	47281	1C Fill Material	19.50	Import
15/10/2024	47282	1C Fill Material	20.18	Import
15/10/2024	47283	1C Fill Material	17.80	Import
15/10/2024	47284	1C Fill Material	18.40	Import
15/10/2024	47285	1C Fill Material	18.30	Import
15/10/2024	47286	1C Fill Material	18.22	Import
15/10/2024	47287	1C Fill Material	18.20	Import
15/10/2024	47288	1C Fill Material	20.10	Import
15/10/2024	47290	1C Fill Material	19.80	Import
15/10/2024	47299	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
15/10/2024	47301	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
15/10/2024	47302	Hazardous Soils – Elevated Hydrocarbons	19.78	Export
15/10/2024	47559	1C Fill Material	19.78	Import
15/10/2024	47560	1C Fill Material	20.10	Import
15/10/2024	47561	1C Fill Material	19.80	Import

16/10/2024	47295	1C Fill Material	20.00	Import
16/10/2024	47496	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
16/10/2024	47497	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
16/10/2024	47499	Hazardous Soils – Elevated Hydrocarbons	17.94	Export
16/10/2024	47500	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
16/10/2024	47501	Hazardous Soils – Elevated Hydrocarbons	15.94	Export
16/10/2024	47502	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
16/10/2024	47503	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
16/10/2024	47504	Hazardous Soils – Elevated Hydrocarbons	19.76	Export
16/10/2024	47505	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
16/10/2024	47506	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
16/10/2024	47507	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
16/10/2024	47508	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
16/10/2024	47509	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
16/10/2024	47510	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
16/10/2024	47512	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
16/10/2024	47513	Hazardous Soils – Elevated Hydrocarbons	18.00	Export
16/10/2024	47514	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
16/10/2024	47515	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
16/10/2024	47538	2C Fill Material	19.76	Import
16/10/2024	47539	2C Fill Material	19.54	Import
16/10/2024	47540	2C Fill Material	20.00	Import
16/10/2024	47541	2C Fill Material	20.00	Import
16/10/2024	47542	2C Fill Material	19.28	Import
16/10/2024	47543	2C Fill Material	20.00	Import
16/10/2024	47544	2C Fill Material	20.00	Import
16/10/2024	47545	2C Fill Material	19.66	Import
16/10/2024	47546	2C Fill Material	19.04	Import
16/10/2024	47547	2C Fill Material	19.10	Import
16/10/2024	47554	2C Fill Material	17.66	Import
16/10/2024	47555	2C Fill Material	19.40	Import
16/10/2024	47556	2C Fill Material	19.04	Import
16/10/2024	47557	2C Fill Material	17.58	Import
16/10/2024	47657	1C Fill Material	18.30	Import
16/10/2024	47658	1C Fill Material	19.80	Import
16/10/2024	47659	1C Fill Material	18.30	Import
16/10/2024	47660	1C Fill Material	19.80	Import
16/10/2024	47661	1C Fill Material	18.40	Import
16/10/2024	47662	1C Fill Material	17.40	Import
16/10/2024	47663	1C Fill Material	19.24	Import
16/10/2024	47664	1C Fill Material	19.80	Import
16/10/2024	47665	1C Fill Material	18.52	Import
16/10/2024	47666	1C Fill Material	19.20	Import
17/10/2024	47247	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
17/10/2024	47289	1C Fill Material	20.00	Import
17/10/2024	47498	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
17/10/2024	47511	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
17/10/2024	47549	2C Fill Material	18.08	Import
17/10/2024	47550	2C Fill Material	17.64	Import
17/10/2024	47551	2C Fill Material	18.18	Import
17/10/2024	47552	2C Fill Material	18.10	Import
17/10/2024	47553	2C Fill Material	18.30	Import
17/10/2024	47853	Hazardous Soils – Elevated Hydrocarbons	18.90	Export

17/10/2024	47854	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
17/10/2024	47855	Hazardous Soils – Elevated Hydrocarbons	20.18	Export
17/10/2024	47856	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
17/10/2024	47857	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
17/10/2024	47858	Hazardous Soils – Elevated Hydrocarbons	20.22	Export
17/10/2024	47859	Hazardous Soils – Elevated Hydrocarbons	16.40	Export
17/10/2024	47860	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
17/10/2024	47861	Hazardous Soils – Elevated Hydrocarbons	18.42	Export
17/10/2024	47862	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
17/10/2024	47863	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
17/10/2024	47864	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
17/10/2024	47865	Hazardous Soils – Elevated Hydrocarbons	19.60	Export
17/10/2024	47866	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
17/10/2024	47867	Hazardous Soils – Elevated Hydrocarbons	19.86	Export
17/10/2024	47868	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
17/10/2024	47869	Hazardous Soils – Elevated Hydrocarbons	20.48	Export
17/10/2024	47870	1C Fill Material	18.64	Import
17/10/2024	47871	1C Fill Material	18.40	Import
17/10/2024	47873	1C Fill Material	18.18	Import
17/10/2024	47874	1C Fill Material	19.50	Import
17/10/2024	47875	1C Fill Material	18.22	Import
17/10/2024	47876	1C Fill Material	18.20	Import
17/10/2024	47877	1C Fill Material	19.62	Import
17/10/2024	47878	1C Fill Material	18.64	Import
17/10/2024	48077	1C Fill Material	18.66	Import
18/10/2024	47120	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
18/10/2024	47303	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
18/10/2024	48114	1C Fill Material	19.62	Import
18/10/2024	48115	1C Fill Material	19.64	Import
18/10/2024	48116	1C Fill Material	17.42	Import
18/10/2024	48117	1C Fill Material	18.70	Import
18/10/2024	48118	1C Fill Material	19.42	Import
18/10/2024	48119	1C Fill Material	18.60	Import
18/10/2024	48120	1C Fill Material	19.00	Import
18/10/2024	48122	1C Fill Material	18.94	Import
18/10/2024	48123	1C Fill Material	19.76	Import
18/10/2024	48125	Hazardous Soils – Elevated Hydrocarbons	18.48	Export
18/10/2024	48126	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
18/10/2024	48127	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
18/10/2024	48128	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
18/10/2024	48129	Hazardous Soils – Elevated Hydrocarbons	19.46	Export
18/10/2024	48130	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
18/10/2024	48131	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
18/10/2024	48132	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
18/10/2024	48133	Hazardous Soils – Elevated Hydrocarbons	18.88	Export
18/10/2024	48134	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
18/10/2024	48135	Hazardous Soils – Elevated Hydrocarbons	21.98	Export
18/10/2024	48136	Hazardous Soils – Elevated Hydrocarbons	19.82	Export
18/10/2024	48137	Hazardous Soils – Elevated Hydrocarbons	20.48	Export
18/10/2024	48138	Hazardous Soils – Elevated Hydrocarbons	16.80	Export
18/10/2024	48139	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
18/10/2024	48140	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
18/10/2024	48141	Hazardous Soils – Elevated Hydrocarbons	20.44	Export

18/10/2024	48423	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
21/10/2024	47548	2C Fill Material	19.30	Import
21/10/2024	48588	Hazardous Soils – Elevated Hydrocarbons	19.90	Export
21/10/2024	48589	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
21/10/2024	48590	Hazardous Soils – Elevated Hydrocarbons	19.28	Export
21/10/2024	48591	Hazardous Soils – Elevated Hydrocarbons	16.46	Export
21/10/2024	48592	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
21/10/2024	48593	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
21/10/2024	48594	Hazardous Soils – Elevated Hydrocarbons	17.78	Export
21/10/2024	48595	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
21/10/2024	48596	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
21/10/2024	48598	Hazardous Soils – Elevated Hydrocarbons	18.96	Export
21/10/2024	48599	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
21/10/2024	48600	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
21/10/2024	48602	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
21/10/2024	48603	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
21/10/2024	48607	1C Fill Material	18.10	Import
21/10/2024	48608	1C Fill Material	19.22	Import
21/10/2024	48609	1C Fill Material	17.92	Import
21/10/2024	48610	1C Fill Material	18.48	Import
21/10/2024	48611	1C Fill Material	18.46	Import
21/10/2024	48612	1C Fill Material	18.82	Import
21/10/2024	48613	1C Fill Material	17.42	Import
22/10/2024	48936	1C Fill Material	20.00	Import
22/10/2024	48969	Hazardous Soils – Elevated Hydrocarbons	14.56	Export
22/10/2024	48971	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
22/10/2024	48973	Hazardous Soils – Elevated Hydrocarbons	17.14	Export
22/10/2024	48975	Hazardous Soils – Elevated Hydrocarbons	19.84	Export
22/10/2024	48978	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
22/10/2024	48980	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
22/10/2024	48981	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
22/10/2024	48982	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
22/10/2024	48983	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
22/10/2024	48984	Hazardous Soils – Elevated Hydrocarbons	19.80	Export
22/10/2024	48985	1C Fill Material	19.22	Import
22/10/2024	48986	1C Fill Material	19.12	Import
22/10/2024	48987	1C Fill Material	19.20	Import
22/10/2024	48988	1C Fill Material	19.33	Import
22/10/2024	48989	1C Fill Material	18.97	Import
22/10/2024	48991	1C Fill Material	19.42	Import
22/10/2024	49092	1C Fill Material	19.50	Import
22/10/2024	49093	1C Fill Material	19.00	Import
22/10/2024	49094	1C Fill Material	19.04	Import
22/10/2024	49096	1C Fill Material	18.78	Import
22/10/2024	49097	1C Fill Material	20.00	Import
22/10/2024	49098	1C Fill Material	18.90	Import
22/10/2024	49100	1C Fill Material	19.50	Import
22/10/2024	49102	1C Fill Material	20.33	Import
22/10/2024	49103	1C Fill Material	20.25	Import
22/10/2024	49104	1C Fill Material	20.31	Import
22/10/2024	49105	1C Fill Material	20.00	Import
22/10/2024	49106	1C Fill Material	20.00	Import
22/10/2024	49107	1C Fill Material	20.00	Import

22/10/2024	49108	1C Fill Material	20.00	Import
22/10/2024	49109	1C Fill Material	20.00	Import
22/10/2024	49110	1C Fill Material	20.00	Import
22/10/2024	49132	1C Fill Material	19.10	Import
22/10/2024	49133	1C Fill Material	18.36	Import
22/10/2024	49135	1C Fill Material	18.40	Import
22/10/2024	49136	1C Fill Material	18.28	Import
22/10/2024	49138	1C Fill Material	18.08	Import
22/10/2024	49139	1C Fill Material	18.54	Import
22/10/2024	49141	1C Fill Material	19.10	Import
22/10/2024	49142	1C Fill Material	19.00	Import
22/10/2024	49172	1C Fill Material	20.00	Import
22/10/2024	49173	1C Fill Material	20.00	Import
23/10/2024	49131	1C Fill Material	19.26	Import
23/10/2024	49134	1C Fill Material	19.07	Import
23/10/2024	49140	1C Fill Material	18.93	Import
23/10/2024	49174	1C Fill Material	19.31	Import
23/10/2024	49175	1C Fill Material	19.08	Import
23/10/2024	49208	1C Fill Material	19.16	Import
23/10/2024	49209	1C Fill Material	19.44	Import
23/10/2024	49210	1C Fill Material	19.09	Import
23/10/2024	49211	1C Fill Material	19.09	Import
23/10/2024	49212	1C Fill Material	19.20	Import
23/10/2024	49213	1C Fill Material	19.11	Import
23/10/2024	49214	1C Fill Material	19.33	Import
23/10/2024	49215	1C Fill Material	19.29	Import
23/10/2024	49216	1C Fill Material	19.10	Import
23/10/2024	49217	1C Fill Material	19.00	Import
23/10/2024	49218	1C Fill Material	19.07	Import
23/10/2024	49219	1C Fill Material	19.09	Import
23/10/2024	49220	1C Fill Material	19.25	Import
23/10/2024	49221	1C Fill Material	19.03	Import
23/10/2024	49222	1C Fill Material	19.03	Import
23/10/2024	49223	1C Fill Material	18.96	Import
23/10/2024	49224	1C Fill Material	19.05	Import
23/10/2024	49225	1C Fill Material	18.88	Import
23/10/2024	49226	1C Fill Material	19.04	Import
23/10/2024	49227	1C Fill Material	19.14	Import
24/10/2024	49510	1C Fill Material	19.04	Import
24/10/2024	49511	1C Fill Material	18.96	Import
24/10/2024	49512	1C Fill Material	19.40	Import
24/10/2024	49513	1C Fill Material	19.00	Import
24/10/2024	49514	1C Fill Material	19.34	Import
24/10/2024	49515	1C Fill Material	19.02	Import
24/10/2024	49516	1C Fill Material	19.12	Import
24/10/2024	49517	1C Fill Material	19.10	Import
24/10/2024	49518	1C Fill Material	19.31	Import
24/10/2024	49519	1C Fill Material	19.27	Import
24/10/2024	49520	1C Fill Material	19.00	Import
24/10/2024	49521	1C Fill Material	19.30	Import
24/10/2024	49522	1C Fill Material	19.06	Import
24/10/2024	49523	1C Fill Material	19.14	Import
24/10/2024	49524	1C Fill Material	19.27	Import

24/10/2024	49525	1C Fill Material	19.26	Import
24/10/2024	49526	1C Fill Material	19.21	Import
24/10/2024	49527	1C Fill Material	19.31	Import
24/10/2024	49528	1C Fill Material	19.11	Import
24/10/2024	49529	1C Fill Material	19.16	Import
24/10/2024	49625	1C Fill Material	19.27	Import
24/10/2024	49626	1C Fill Material	19.18	Import
24/10/2024	49627	1C Fill Material	19.40	Import
24/10/2024	49628	1C Fill Material	19.20	Import
24/10/2024	49795	1C Fill Material	19.96	Import
24/10/2024	49796	1C Fill Material	20.00	Import
25/10/2024	49621	1C Fill Material	19.05	Import
25/10/2024	49622	1C Fill Material	19.18	Import
25/10/2024	49623	1C Fill Material	19.00	Import
25/10/2024	49624	1C Fill Material	19.05	Import
25/10/2024	49629	1C Fill Material	19.04	Import
25/10/2024	49630	1C Fill Material	19.18	Import
25/10/2024	49631	1C Fill Material	19.22	Import
25/10/2024	49632	1C Fill Material	19.33	Import
25/10/2024	49633	1C Fill Material	19.14	Import
25/10/2024	49634	1C Fill Material	19.40	Import
25/10/2024	49635	1C Fill Material	19.25	Import
25/10/2024	49697	1C Fill Material	19.35	Import
25/10/2024	49698	1C Fill Material	19.02	Import
25/10/2024	49699	1C Fill Material	19.37	Import
25/10/2024	49700	1C Fill Material	20.00	Import
25/10/2024	49701	1C Fill Material	19.30	Import
25/10/2024	49702	1C Fill Material	19.12	Import
25/10/2024	49703	1C Fill Material	19.07	Import
25/10/2024	49704	1C Fill Material	19.07	Import
25/10/2024	49705	1C Fill Material	19.02	Import
25/10/2024	49793	1C Fill Material	20.00	Import
25/10/2024	49807	Hazardous Soils cont. Pfas	18.30	Export
25/10/2024	49808	Hazardous Soils cont. Pfas	19.98	Export
25/10/2024	49809	Hazardous Soils cont. Pfas	19.86	Export
25/10/2024	49880	1C Fill Material	19.76	Import
28/10/2024	49095	1C Fill Material	19.80	Import
28/10/2024	49099	1C Fill Material	20.00	Import
28/10/2024	49101	1C Fill Material	19.90	Import
28/10/2024	49137	1C Fill Material	19.40	Import
28/10/2024	49923	Hazardous Soils cont. Pfas	16.52	Export
28/10/2024	49924	Hazardous Soils cont. Pfas	19.50	Export
28/10/2024	49925	Hazardous Soils cont. Pfas	19.76	Export
28/10/2024	49926	Hazardous Soils cont. Pfas	17.96	Export
28/10/2024	49927	Hazardous Soils cont. Pfas	19.12	Export
28/10/2024	49928	Hazardous Soils cont. Pfas	17.20	Export
28/10/2024	49929	Hazardous Soils cont. Pfas	18.92	Export
28/10/2024	49930	Hazardous Soils cont. Pfas	18.90	Export
28/10/2024	49931	Hazardous Soils cont. Pfas	20.08	Export
28/10/2024	49932	Hazardous Soils cont. Pfas	18.54	Export
28/10/2024	49960	1C Fill Material	19.80	Import
28/10/2024	49961	1C Fill Material	20.05	Import
28/10/2024	49962	1C Fill Material	20.20	Import

28/10/2024	49963	1C Fill Material	19.95	Import
28/10/2024	49964	1C Fill Material	20.15	Import
28/10/2024	49965	1C Fill Material	20.30	Import
28/10/2024	49966	1C Fill Material	20.00	Import
28/10/2024	49967	1C Fill Material	20.00	Import
28/10/2024	49968	1C Fill Material	20.00	Import
28/10/2024	49969	1C Fill Material	20.00	Import
28/10/2024	49971	1C Fill Material	20.00	Import
28/10/2024	49972	1C Fill Material	20.00	Import
28/10/2024	49973	1C Fill Material	20.00	Import
28/10/2024	49981	1C Fill Material	19.50	Import
29/10/2024	49781	Hazardous Soils cont. Pfas	19.34	Export
29/10/2024	49782	Hazardous Soils cont. Pfas	19.18	Export
29/10/2024	49783	Hazardous Soils cont. Pfas	19.90	Export
29/10/2024	49794	1C Fill Material	19.86	Import
29/10/2024	49970	1C Fill Material	20.00	Import
29/10/2024	49974	1C Fill Material	20.00	Import
29/10/2024	49975	1C Fill Material	19.78	Import
29/10/2024	50081	1C Fill Material	20.00	Import
29/10/2024	50178	Hazardous Soils cont. Pfas	18.96	Export
29/10/2024	50179	Hazardous Soils cont. Pfas	15.84	Export
29/10/2024	50180	Hazardous Soils cont. Pfas	18.42	Export
29/10/2024	50181	Hazardous Soils cont. Pfas	19.28	Export
29/10/2024	50182	Hazardous Soils cont. Pfas	18.44	Export
29/10/2024	50183	Hazardous Soils cont. Pfas	19.18	Export
29/10/2024	50184	Hazardous Soils cont. Pfas	19.62	Export
29/10/2024	50185	Hazardous Soils cont. Pfas	18.16	Export
29/10/2024	50186	Hazardous Soils cont. Pfas	18.26	Export
29/10/2024	50187	Hazardous Soils cont. Pfas	18.96	Export
29/10/2024	50195	1C Fill Material	20.00	Import
29/10/2024	50196	1C Fill Material	20.00	Import
29/10/2024	50197	1C Fill Material	20.00	Import
29/10/2024	50198	1C Fill Material	20.00	Import
29/10/2024	50199	1C Fill Material	20.00	Import
29/10/2024	50200	1C Fill Material	20.00	Import
29/10/2024	50201	1C Fill Material	20.00	Import
29/10/2024	50202	1C Fill Material	20.00	Import
29/10/2024	50263	1C Fill Material	19.83	Import
29/10/2024	50264	1C Fill Material	20.00	Import
29/10/2024	50265	1C Fill Material	20.00	Import
29/10/2024	50284	1C Fill Material	19.40	Import
29/10/2024	50285	1C Fill Material	19.50	Import
29/10/2024	50289	1C Fill Material	20.00	Import
29/10/2024	50290	1C Fill Material	20.00	Import
29/10/2024	50291	1C Fill Material	20.00	Import
29/10/2024	50292	Hazardous Soils cont. Pfas	18.60	Export
29/10/2024	50293	Hazardous Soils cont. Pfas	18.54	Export
29/10/2024	50338	Hazardous Soils cont. Pfas	18.46	Export
29/10/2024	50383	1C Fill Material	19.40	Import
29/10/2024	51586	1C Fill Material	20.00	Import
29/10/2024	51587	1C Fill Material	20.00	Import
30/10/2024	50339	Hazardous Soils cont. Pfas	18.84	Export
30/10/2024	50340	Hazardous Soils cont. Pfas	16.74	Export

30/10/2024	50341	Hazardous Soils cont. Pfas	17.88	Export
30/10/2024	50342	Hazardous Soils cont. Pfas	18.96	Export
30/10/2024	50343	Hazardous Soils cont. Pfas	19.62	Export
30/10/2024	50344	Hazardous Soils cont. Pfas	19.06	Export
30/10/2024	50345	Hazardous Soils cont. Pfas	18.36	Export
30/10/2024	50346	Hazardous Soils cont. Pfas	18.98	Export
30/10/2024	50347	Hazardous Soils cont. Pfas	19.84	Export
30/10/2024	50348	1C Fill Material	20.00	Import
30/10/2024	50349	1C Fill Material	20.00	Import
30/10/2024	50350	1C Fill Material	20.00	Import
30/10/2024	50353	1C Fill Material	20.00	Import
30/10/2024	50354	1C Fill Material	20.00	Import
30/10/2024	50355	1C Fill Material	20.00	Import
30/10/2024	50356	1C Fill Material	20.00	Import
30/10/2024	50357	1C Fill Material	20.00	Import
30/10/2024	50358	1C Fill Material	20.00	Import
30/10/2024	50359	1C Fill Material	20.00	Import
30/10/2024	50360	1C Fill Material	20.00	Import
30/10/2024	50361	1C Fill Material	20.00	Import
30/10/2024	50457	Hazardous Soils cont. Pfas	19.98	Export
31/10/2024	50471	Hazardous Soils cont. Pfas	18.42	Export
31/10/2024	50472	Hazardous Soils cont. Pfas	18.24	Export
31/10/2024	50473	Hazardous Soils cont. Pfas	18.10	Export
31/10/2024	50474	Hazardous Soils cont. Pfas	18.92	Export
31/10/2024	50475	Hazardous Soils cont. Pfas	19.34	Export
31/10/2024	50579	Hazardous Soils cont. Pfas	19.46	Export
31/10/2024	50580	Hazardous Soils cont. Pfas	18.88	Export
31/10/2024	50581	Hazardous Soils cont. Pfas	19.34	Export
31/10/2024	50582	Hazardous Soils cont. Pfas	18.18	Export
31/10/2024	50583	Hazardous Soils cont. Pfas	19.60	Export
01/11/2024	50811	Hazardous Soils cont. Pfas	18.98	Export
01/11/2024	50812	Hazardous Soils cont. Pfas	18.34	Export
01/11/2024	50813	Hazardous Soils cont. Pfas	19.80	Export
01/11/2024	50814	Hazardous Soils cont. Pfas	18.56	Export
01/11/2024	50815	Hazardous Soils cont. Pfas	18.56	Export
01/11/2024	50816	Hazardous Soils cont. Pfas	19.38	Export
01/11/2024	50817	Hazardous Soils cont. Pfas	19.78	Export
01/11/2024	50818	Hazardous Soils cont. Pfas	16.32	Export
01/11/2024	50819	Hazardous Soils cont. Pfas	18.30	Export
01/11/2024	50820	Hazardous Soils cont. Pfas	18.52	Export
01/11/2024	50823	1C Fill Material	20.05	Import
01/11/2024	50824	1C Fill Material	20.20	Import
01/11/2024	50825	1C Fill Material	20.30	Import
01/11/2024	50826	1C Fill Material	20.30	Import
01/11/2024	50827	1C Fill Material	20.30	Import
01/11/2024	50828	1C Fill Material	19.80	Import
01/11/2024	50829	1C Fill Material	19.60	Import
01/11/2024	50830	1C Fill Material	20.20	Import
04/11/2024	51099	Hazardous Soils cont. Pfas	19.10	Export
04/11/2024	51100	Hazardous Soils cont. Pfas	19.04	Export
04/11/2024	51101	Hazardous Soils cont. Pfas	18.26	Export
04/11/2024	51102	Hazardous Soils cont. Pfas	19.52	Export
04/11/2024	51103	Hazardous Soils cont. Pfas	17.62	Export

04/11/2024	51104	Hazardous Soils cont. Pfas	19.62	Export
04/11/2024	51105	Hazardous Soils cont. Pfas	19.72	Export
04/11/2024	51106	Hazardous Soils cont. Pfas	18.60	Export
04/11/2024	51108	Hazardous Soils cont. Pfas	18.94	Export
04/11/2024	51290	MOT Type 1 Limestone	18.30	Import
04/11/2024	51291	MOT Type 1 Limestone	20.00	Import
05/11/2024	51107	Hazardous Soils cont. Pfas	18.10	Export
05/11/2024	51302	Hazardous Soils cont. Pfas	18.50	Export
05/11/2024	51303	Hazardous Soils cont. Pfas	19.20	Export
05/11/2024	51304	Hazardous Soils cont. Pfas	18.14	Export
05/11/2024	51305	Hazardous Soils cont. Pfas	18.76	Export
05/11/2024	51306	Hazardous Soils cont. Pfas	17.22	Export
05/11/2024	51307	Hazardous Soils cont. Pfas	19.46	Export
05/11/2024	51308	Hazardous Soils cont. Pfas	19.40	Export
05/11/2024	51309	Hazardous Soils cont. Pfas	18.54	Export
06/11/2024	51728	Hazardous Soils cont. Pfas	19.00	Export
06/11/2024	51729	Hazardous Soils cont. Pfas	17.74	Export
06/11/2024	51730	Hazardous Soils cont. Pfas	19.10	Export
06/11/2024	51731	Hazardous Soils cont. Pfas	18.42	Export
06/11/2024	51732	Hazardous Soils cont. Pfas	19.36	Export
06/11/2024	51733	Hazardous Soils cont. Pfas	18.46	Export
06/11/2024	51734	Hazardous Soils cont. Pfas	19.28	Export
06/11/2024	51735	Hazardous Soils cont. Pfas	18.78	Export
06/11/2024	51736	Hazardous Soils cont. Pfas	18.96	Export
07/11/2024	52030	Hazardous Soils cont. Pfas	18.96	Export
07/11/2024	52031	Hazardous Soils cont. Pfas	17.66	Export
07/11/2024	52032	Hazardous Soils cont. Pfas	18.36	Export
07/11/2024	52033	Hazardous Soils cont. Pfas	18.84	Export
07/11/2024	52034	Hazardous Soils cont. Pfas	18.88	Export
07/11/2024	52035	Hazardous Soils cont. Pfas	19.38	Export
07/11/2024	52036	Hazardous Soils cont. Pfas	18.78	Export
07/11/2024	52037	Hazardous Soils cont. Pfas	19.72	Export
07/11/2024	52038	Hazardous Soils cont. Pfas	18.80	Export
07/11/2024	52039	Hazardous Soils cont. Pfas	19.60	Export
08/11/2024	52386	Hazardous Soils cont. Pfas	18.50	Export
08/11/2024	52387	Hazardous Soils cont. Pfas	19.98	Export
08/11/2024	52388	Hazardous Soils cont. Pfas	18.66	Export
08/11/2024	52389	Hazardous Soils cont. Pfas	19.88	Export
08/11/2024	52390	Hazardous Soils cont. Pfas	18.26	Export
08/11/2024	52391	Hazardous Soils cont. Pfas	21.80	Export
08/11/2024	52392	Hazardous Soils cont. Pfas	18.02	Export
08/11/2024	52393	Hazardous Soils cont. Pfas	19.14	Export
08/11/2024	52394	Hazardous Soils cont. Pfas	18.96	Export
08/11/2024	52395	Hazardous Soils cont. Pfas	17.10	Export
11/11/2024	52624	Hazardous Soils cont. Pfas	19.34	Export
11/11/2024	52625	Hazardous Soils cont. Pfas	18.32	Export
11/11/2024	52626	Hazardous Soils cont. Pfas	19.88	Export
11/11/2024	52627	Hazardous Soils cont. Pfas	19.24	Export
11/11/2024	52628	Hazardous Soils cont. Pfas	19.14	Export
11/11/2024	52629	Hazardous Soils cont. Pfas	18.42	Export
11/11/2024	52630	Hazardous Soils cont. Pfas	18.64	Export
11/11/2024	52631	Hazardous Soils cont. Pfas	18.58	Export
11/11/2024	52632	Hazardous Soils cont. Pfas	18.10	Export

11/11/2024	52633	Hazardous Soils cont. Pfas	19.78	Export
13/11/2024	53033	Hazardous Soils cont. Pfas	18.88	Export
13/11/2024	53034	Hazardous Soils cont. Pfas	18.94	Export
13/11/2024	53055	Cable Sand Enats 97-01	19.18	Import
14/11/2024	53032	Hazardous Soils cont. Pfas	19.70	Export
18/11/2024	53739	150/75mm Clean Gritstone	19.96	Import
18/11/2024	53740	150/75mm Clean Gritstone	19.52	Import
19/11/2024	54004	150/75mm Clean Gritstone	20.30	Import
19/11/2024	54005	150/75mm Clean Gritstone	19.96	Import
19/11/2024	54006	150/75mm Clean Gritstone	19.70	Import
19/11/2024	54007	150/75mm Clean Gritstone	19.74	Import
20/11/2024	54008	150/75mm Clean Gritstone	19.36	Import
22/11/2024	54526	Tarmac Off Site (17-03-02)	19.00	Export
27/11/2024	55124	150/75mm Clean Gritstone	20.00	Import
27/11/2024	55125	150/75mm Clean Gritstone	19.78	Import
27/11/2024	55126	150/75mm Clean Gritstone	19.58	Import
27/11/2024	55127	150/75mm Clean Gritstone	20.20	Import
27/11/2024	55128	150/75mm Clean Gritstone	19.48	Import
27/11/2024	55129	150/75mm Clean Gritstone	19.70	Import
27/11/2024	55130	150/75mm Clean Gritstone	20.20	Import
27/11/2024	55131	150/75mm Clean Gritstone	20.30	Import
27/11/2024	55132	150/75mm Clean Gritstone	20.00	Import
27/11/2024	55133	150/75mm Clean Gritstone	19.70	Import
28/11/2024	55134	150/75mm Clean Gritstone	19.54	Import
28/11/2024	55135	150/75mm Clean Gritstone	19.92	Import
28/11/2024	55136	150/75mm Clean Gritstone	20.00	Import
28/11/2024	55137	150/75mm Clean Gritstone	20.32	Import
28/11/2024	55138	150/75mm Clean Gritstone	20.20	Import
28/11/2024	55139	150/75mm Clean Gritstone	19.00	Import
28/11/2024	55140	150/75mm Clean Gritstone	20.00	Import
28/11/2024	55141	150/75mm Clean Gritstone	19.72	Import
28/11/2024	55142	150/75mm Clean Gritstone	19.56	Import
28/11/2024	55143	150/75mm Clean Gritstone	19.88	Import
28/11/2024	55537	Tarmac Off Site (17-03-02)	19.00	Export
29/11/2024	55734	Hazardous Soils – Elevated Hydrocarbons	17.42	Export
29/11/2024	55735	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
29/11/2024	55736	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
29/11/2024	55738	Hazardous Soils – Elevated Hydrocarbons	19.70	Export
02/12/2024	55737	Hazardous Soils – Elevated Hydrocarbons	18.44	Export
02/12/2024	55739	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
02/12/2024	55740	Hazardous Soils – Elevated Hydrocarbons	18.86	Export
02/12/2024	55741	Hazardous Soils – Elevated Hydrocarbons	18.18	Export
02/12/2024	55742	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
02/12/2024	55844	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
02/12/2024	55845	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
02/12/2024	55846	Hazardous Soils – Elevated Hydrocarbons	18.34	Export
02/12/2024	55847	Hazardous Soils – Elevated Hydrocarbons	19.00	Export
02/12/2024	55848	Hazardous Soils – Elevated Hydrocarbons	18.16	Export
02/12/2024	55849	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
02/12/2024	55850	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
02/12/2024	55851	Hazardous Soils – Elevated Hydrocarbons	17.40	Export
02/12/2024	55852	Hazardous Soils – Elevated Hydrocarbons	20.10	Export
02/12/2024	55853	Hazardous Soils – Elevated Hydrocarbons	20.08	Export

02/12/2024	55854	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
02/12/2024	55855	Hazardous Soils – Elevated Hydrocarbons	17.68	Export
02/12/2024	55856	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
02/12/2024	55857	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
02/12/2024	55858	Hazardous Soils – Elevated Hydrocarbons	18.60	Export
02/12/2024	55859	Hazardous Soils – Elevated Hydrocarbons	17.82	Export
02/12/2024	55860	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
02/12/2024	55861	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
02/12/2024	55862	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
02/12/2024	55863	Hazardous Soils – Elevated Hydrocarbons	19.04	Export
02/12/2024	56114	Hazardous Soils – Elevated Hydrocarbons	19.36	Export
03/12/2024	55743	Hazardous Soils – Elevated Hydrocarbons	19.02	Export
03/12/2024	55744	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
03/12/2024	55745	Hazardous Soils – Elevated Hydrocarbons	19.20	Export
03/12/2024	55746	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
03/12/2024	55747	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
03/12/2024	55748	Hazardous Soils – Elevated Hydrocarbons	17.60	Export
03/12/2024	55749	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
03/12/2024	55750	Hazardous Soils – Elevated Hydrocarbons	17.80	Export
03/12/2024	55751	Hazardous Soils – Elevated Hydrocarbons	19.18	Export
03/12/2024	55752	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
03/12/2024	55753	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
03/12/2024	56021	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
03/12/2024	56022	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
03/12/2024	56023	Hazardous Soils – Elevated Hydrocarbons	19.64	Export
03/12/2024	56024	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
03/12/2024	56025	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
03/12/2024	56026	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
03/12/2024	56027	Hazardous Soils – Elevated Hydrocarbons	18.12	Export
03/12/2024	56028	Hazardous Soils – Elevated Hydrocarbons	19.22	Export
03/12/2024	56029	Hazardous Soils – Elevated Hydrocarbons	19.34	Export
03/12/2024	56083	MOT Type 1 Limestone	19.54	Import
03/12/2024	56084	MOT Type 1 Limestone	19.64	Import
03/12/2024	56153	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
04/12/2024	56157	150/75mm Clean Gritstone	19.82	Import
04/12/2024	56161	150/75mm Clean Gritstone	20.20	Import
04/12/2024	56168	150/75mm Clean Gritstone	18.94	Import
04/12/2024	56169	150/75mm Clean Gritstone	19.08	Import
04/12/2024	56170	150/75mm Clean Gritstone	19.40	Import
04/12/2024	56172	150/75mm Clean Gritstone	19.00	Import
04/12/2024	56173	150/75mm Clean Gritstone	18.40	Import
04/12/2024	56174	150/75mm Clean Gritstone	18.74	Import
04/12/2024	56175	150/75mm Clean Gritstone	18.80	Import
04/12/2024	56176	150/75mm Clean Gritstone	17.00	Import
04/12/2024	56193	Hazardous Soils – Elevated Hydrocarbons	20.32	Export
04/12/2024	56194	Hazardous Soils – Elevated Hydrocarbons	21.34	Export
04/12/2024	56195	Hazardous Soils – Elevated Hydrocarbons	18.72	Export
04/12/2024	56196	Hazardous Soils – Elevated Hydrocarbons	19.66	Export
04/12/2024	56197	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
04/12/2024	56198	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
04/12/2024	56199	Hazardous Soils – Elevated Hydrocarbons	19.42	Export
04/12/2024	56200	Hazardous Soils – Elevated Hydrocarbons	17.70	Export
04/12/2024	56201	Hazardous Soils – Elevated Hydrocarbons	18.70	Export

04/12/2024	56202	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
04/12/2024	56203	Hazardous Soils – Elevated Hydrocarbons	17.60	Export
04/12/2024	56206	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
04/12/2024	56207	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
04/12/2024	56208	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
04/12/2024	56209	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
04/12/2024	56210	Hazardous Soils – Elevated Hydrocarbons	18.04	Export
04/12/2024	56211	Hazardous Soils – Elevated Hydrocarbons	18.62	Export
04/12/2024	56292	0/4mm Washed Gritsand	20.00	Import
04/12/2024	56347	MOT Type 1 Limestone	19.76	Import
04/12/2024	56446	150/75mm Clean Gritstone	19.58	Import
04/12/2024	56447	150/75mm Clean Gritstone	19.60	Import
04/12/2024	56448	150/75mm Clean Gritstone	20.36	Import
05/12/2024	56162	150/75mm Clean Gritstone	19.66	Import
05/12/2024	56163	150/75mm Clean Gritstone	19.90	Import
05/12/2024	56164	150/75mm Clean Gritstone	19.70	Import
05/12/2024	56165	150/75mm Clean Gritstone	19.40	Import
05/12/2024	56166	150/75mm Clean Gritstone	19.40	Import
05/12/2024	56167	150/75mm Clean Gritstone	18.56	Import
05/12/2024	56171	150/75mm Clean Gritstone	19.54	Import
05/12/2024	56205	Hazardous Soils – Elevated Hydrocarbons	18.84	Export
05/12/2024	56481	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
05/12/2024	56482	Hazardous Soils – Elevated Hydrocarbons	18.36	Export
05/12/2024	56483	Hazardous Soils – Elevated Hydrocarbons	16.38	Export
05/12/2024	56484	Hazardous Soils – Elevated Hydrocarbons	22.08	Export
05/12/2024	56485	Hazardous Soils – Elevated Hydrocarbons	17.24	Export
05/12/2024	56486	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
05/12/2024	56487	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
05/12/2024	56488	Hazardous Soils – Elevated Hydrocarbons	19.48	Export
05/12/2024	56489	Hazardous Soils – Elevated Hydrocarbons	18.30	Export
05/12/2024	56490	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
05/12/2024	56491	Hazardous Soils – Elevated Hydrocarbons	19.44	Export
05/12/2024	56492	Hazardous Soils – Elevated Hydrocarbons	18.90	Export
05/12/2024	56493	Hazardous Soils – Elevated Hydrocarbons	19.62	Export
05/12/2024	56494	Hazardous Soils – Elevated Hydrocarbons	19.16	Export
05/12/2024	56495	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
05/12/2024	56496	Hazardous Soils – Elevated Hydrocarbons	18.40	Export
05/12/2024	56497	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
05/12/2024	56498	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
05/12/2024	56499	Hazardous Soils – Elevated Hydrocarbons	19.10	Export
06/12/2024	56204	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
06/12/2024	56212	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
06/12/2024	56607	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
06/12/2024	56608	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
06/12/2024	56609	Hazardous Soils – Elevated Hydrocarbons	17.64	Export
06/12/2024	56610	Hazardous Soils – Elevated Hydrocarbons	17.74	Export
06/12/2024	56611	Hazardous Soils – Elevated Hydrocarbons	18.64	Export
06/12/2024	56612	Hazardous Soils – Elevated Hydrocarbons	17.84	Export
09/12/2024	56500	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
09/12/2024	56776	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
09/12/2024	56912	Hazardous Soils – Elevated Hydrocarbons	18.28	Export
09/12/2024	56913	Hazardous Soils – Elevated Hydrocarbons	19.50	Export
09/12/2024	56914	Hazardous Soils – Elevated Hydrocarbons	21.24	Export

09/12/2024	56915	Hazardous Soils – Elevated Hydrocarbons	18.78	Export
09/12/2024	56916	Hazardous Soils – Elevated Hydrocarbons	19.30	Export
09/12/2024	56917	Hazardous Soils – Elevated Hydrocarbons	17.52	Export
09/12/2024	56918	Hazardous Soils – Elevated Hydrocarbons	17.30	Export
09/12/2024	56919	Hazardous Soils – Elevated Hydrocarbons	17.48	Export
09/12/2024	56920	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
09/12/2024	56921	Hazardous Soils – Elevated Hydrocarbons	18.58	Export
09/12/2024	56922	Hazardous Soils – Elevated Hydrocarbons	18.20	Export
09/12/2024	56923	Hazardous Soils – Elevated Hydrocarbons	17.28	Export
09/12/2024	56924	Hazardous Soils – Elevated Hydrocarbons	20.12	Export
09/12/2024	56925	Hazardous Soils – Elevated Hydrocarbons	16.94	Export
09/12/2024	56926	Hazardous Soils – Elevated Hydrocarbons	17.88	Export
09/12/2024	56927	Hazardous Soils – Elevated Hydrocarbons	18.94	Export
09/12/2024	56928	Hazardous Soils – Elevated Hydrocarbons	17.98	Export
09/12/2024	56929	Hazardous Soils – Elevated Hydrocarbons	18.26	Export
09/12/2024	56930	Hazardous Soils – Elevated Hydrocarbons	18.06	Export
09/12/2024	56931	Hazardous Soils – Elevated Hydrocarbons	17.96	Export
09/12/2024	57090	Hazardous Soils – Elevated Hydrocarbons	18.38	Export
09/12/2024	57091	Hazardous Soils – Elevated Hydrocarbons	18.68	Export
10/12/2024	57053	Hazardous Soils – Elevated Hydrocarbons	18.32	Export
10/12/2024	57054	Hazardous Soils – Elevated Hydrocarbons	17.38	Export
10/12/2024	57055	Hazardous Soils – Elevated Hydrocarbons	17.14	Export
10/12/2024	57056	Hazardous Soils – Elevated Hydrocarbons	18.98	Export
10/12/2024	57057	Hazardous Soils – Elevated Hydrocarbons	18.52	Export
10/12/2024	57058	Hazardous Soils – Elevated Hydrocarbons	17.56	Export
10/12/2024	57059	Hazardous Soils – Elevated Hydrocarbons	18.46	Export
10/12/2024	57060	Hazardous Soils – Elevated Hydrocarbons	17.78	Export
10/12/2024	57061	Hazardous Soils – Elevated Hydrocarbons	18.70	Export
10/12/2024	57062	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
10/12/2024	57063	Hazardous Soils – Elevated Hydrocarbons	18.22	Export
10/12/2024	57064	Hazardous Soils – Elevated Hydrocarbons	19.38	Export
10/12/2024	57065	Hazardous Soils – Elevated Hydrocarbons	19.06	Export
10/12/2024	57066	Hazardous Soils – Elevated Hydrocarbons	18.66	Export
10/12/2024	57067	Hazardous Soils – Elevated Hydrocarbons	18.92	Export
10/12/2024	57068	Hazardous Soils – Elevated Hydrocarbons	19.52	Export
10/12/2024	57069	Hazardous Soils – Elevated Hydrocarbons	19.58	Export
10/12/2024	57070	Hazardous Soils – Elevated Hydrocarbons	18.54	Export
10/12/2024	57071	Hazardous Soils – Elevated Hydrocarbons	17.44	Export
10/12/2024	57072	Hazardous Soils – Elevated Hydrocarbons	19.72	Export
10/12/2024	57092	Hazardous Soils – Elevated Hydrocarbons	19.12	Export
11/12/2024	57274	Hazardous Soils – Elevated Hydrocarbons	18.08	Export
11/12/2024	57277	Hazardous Soils – Elevated Hydrocarbons	19.56	Export
11/12/2024	57278	Hazardous Soils – Elevated Hydrocarbons	18.76	Export
11/12/2024	57280	Hazardous Soils – Elevated Hydrocarbons	18.02	Export
11/12/2024	57282	Hazardous Soils – Elevated Hydrocarbons	17.92	Export
11/12/2024	57284	Hazardous Soils – Elevated Hydrocarbons	19.24	Export
11/12/2024	57285	Hazardous Soils – Elevated Hydrocarbons	18.82	Export
11/12/2024	57287	Hazardous Soils – Elevated Hydrocarbons	18.10	Export
17/12/2024	58318	150/75mm Clean Gritstone	20.26	Import
17/12/2024	58319	150/75mm Clean Gritstone	19.92	Import
17/12/2024	58320	150/75mm Clean Gritstone	19.94	Import
17/12/2024	58324	150/75mm Clean Gritstone	20.30	Import
17/12/2024	58325	150/75mm Clean Gritstone	19.65	Import

17/12/2024	58326	150/75mm Clean Gritstone	20.20	Import
17/12/2024	58327	150/75mm Clean Gritstone	20.02	Import
18/12/2024	58321	150/75mm Clean Gritstone	20.00	Import
18/12/2024	58322	150/75mm Clean Gritstone	20.10	Import
18/12/2024	58323	150/75mm Clean Gritstone	20.00	Import
11/04/2025	71965	1C Fill Material	19.70	Import
11/04/2025	71972	1C Fill Material	20.00	Import
11/04/2025	72094	1C Fill Material	19.70	Import
11/04/2025	72095	1C Fill Material	19.90	Import
11/04/2025	72096	1C Fill Material	19.84	Import
11/04/2025	72097	1C Fill Material	20.00	Import
11/04/2025	72098	1C Fill Material	20.00	Import
11/04/2025	72099	1C Fill Material	20.00	Import
11/04/2025	72100	1C Fill Material	20.00	Import
11/04/2025	72105	1C Fill Material	19.50	Import
11/04/2025	72106	1C Fill Material	19.89	Import
11/04/2025	72107	1C Fill Material	19.65	Import
14/04/2025	72474	1C Fill Material	20.00	Import
14/04/2025	72475	1C Fill Material	20.00	Import
14/04/2025	72476	1C Fill Material	19.50	Import
14/04/2025	72477	1C Fill Material	19.50	Import
14/04/2025	72478	1C Fill Material	19.50	Import
14/04/2025	72479	1C Fill Material	19.50	Import
14/04/2025	72480	1C Fill Material	20.30	Import
14/04/2025	72481	1C Fill Material	20.30	Import
14/04/2025	72482	1C Fill Material	20.35	Import
14/04/2025	72483	1C Fill Material	20.35	Import
14/04/2025	72484	1C Fill Material	19.50	Import
14/04/2025	72485	1C Fill Material	19.50	Import
14/04/2025	72486	1C Fill Material	19.50	Import
14/04/2025	72487	1C Fill Material	19.50	Import
14/04/2025	72488	1C Fill Material	19.50	Import
14/04/2025	72489	1C Fill Material	19.50	Import
14/04/2025	72490	1C Fill Material	19.50	Import
14/04/2025	72491	1C Fill Material	19.50	Import
14/04/2025	72492	1C Fill Material	20.00	Import
14/04/2025	72493	1C Fill Material	19.50	Import
14/04/2025	72577	1C Fill Material	20.00	Import
14/04/2025	72578	1C Fill Material	20.00	Import
14/04/2025	72579	1C Fill Material	20.00	Import
15/04/2025	72495	1C Fill Material	19.74	Import
15/04/2025	72496	1C Fill Material	20.06	Import
15/04/2025	72497	1C Fill Material	20.00	Import
15/04/2025	72498	1C Fill Material	20.00	Import
15/04/2025	72499	1C Fill Material	19.80	Import
15/04/2025	72500	1C Fill Material	20.30	Import
15/04/2025	72501	1C Fill Material	20.20	Import
15/04/2025	72502	1C Fill Material	19.64	Import
15/04/2025	72504	1C Fill Material	20.35	Import
15/04/2025	72505	1C Fill Material	20.00	Import
15/04/2025	72506	1C Fill Material	19.52	Import
15/04/2025	72507	1C Fill Material	20.22	Import
15/04/2025	72514	1C Fill Material	20.33	Import

15/04/2025	72656	1C Fill Material	20.50	Import
15/04/2025	72783	1C Fill Material	19.30	Import
15/04/2025	72851	1C Fill Material	20.50	Import
16/04/2025	72714	1C Fill Material	19.40	Import
16/04/2025	72715	1C Fill Material	18.44	Import
16/04/2025	72716	1C Fill Material	19.98	Import
16/04/2025	72717	1C Fill Material	18.92	Import
16/04/2025	72718	1C Fill Material	18.78	Import
16/04/2025	72719	1C Fill Material	18.96	Import
16/04/2025	72720	1C Fill Material	20.14	Import
16/04/2025	72721	1C Fill Material	20.50	Import
16/04/2025	72722	1C Fill Material	19.94	Import
16/04/2025	72723	1C Fill Material	19.86	Import
16/04/2025	72724	1C Fill Material	19.92	Import
16/04/2025	72725	1C Fill Material	19.65	Import
16/04/2025	72726	1C Fill Material	19.94	Import
16/04/2025	72727	1C Fill Material	20.05	Import
16/04/2025	72728	1C Fill Material	20.00	Import
16/04/2025	72729	1C Fill Material	19.88	Import
16/04/2025	72730	1C Fill Material	19.90	Import
16/04/2025	72731	1C Fill Material	19.58	Import
16/04/2025	72732	1C Fill Material	20.00	Import
16/04/2025	72733	1C Fill Material	20.00	Import
16/04/2025	72888	1C Fill Material	19.48	Import
16/04/2025	72908	1C Fill Material	20.02	Import
16/04/2025	72909	1C Fill Material	20.20	Import
16/04/2025	72910	1C Fill Material	19.34	Import
16/04/2025	72911	1C Fill Material	19.99	Import
16/04/2025	72912	1C Fill Material	20.00	Import
16/04/2025	72913	1C Fill Material	19.86	Import
16/04/2025	72915	1C Fill Material	20.04	Import
16/04/2025	72916	1C Fill Material	19.38	Import
16/04/2025	72917	1C Fill Material	19.32	Import
17/04/2025	72914	1C Fill Material	20.28	Import
17/04/2025	72920	1C Fill Material	20.00	Import
17/04/2025	72921	1C Fill Material	20.08	Import
17/04/2025	72922	1C Fill Material	19.74	Import
17/04/2025	72923	1C Fill Material	19.82	Import
17/04/2025	72924	1C Fill Material	17.66	Import
17/04/2025	72926	1C Fill Material	18.98	Import
17/04/2025	72927	1C Fill Material	19.50	Import
17/04/2025	72928	1C Fill Material	20.30	Import
17/04/2025	72929	1C Fill Material	19.80	Import
17/04/2025	72930	1C Fill Material	20.30	Import
17/04/2025	72931	1C Fill Material	20.30	Import
17/04/2025	72932	1C Fill Material	20.00	Import
17/04/2025	72933	1C Fill Material	19.91	Import
17/04/2025	72934	1C Fill Material	19.44	Import
17/04/2025	72935	1C Fill Material	19.58	Import
17/04/2025	72936	1C Fill Material	19.92	Import
17/04/2025	72937	1C Fill Material	19.58	Import
17/04/2025	72938	1C Fill Material	19.66	Import
17/04/2025	72939	1C Fill Material	19.64	Import

17/04/2025	73218	1C Fill Material	18.70	Import
17/04/2025	73219	1C Fill Material	19.24	Import

Appendix G

Imported WRAP material

G.1 Provectus WRAP protocol July 2024

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1 Introduction

Provectus have been appointed by BAM Nuttal to crush a concrete site-won and/or segregated material stockpile to 6F2 grade product, at the Manchester Victoria site, Dantzic St M4 4DD (NT02 to NT04).

The site has much hardstanding and concrete foundations/obstructions which are to be removed to allow site clearance, level reduction and the remediation of several hotspots of soil contamination. The concrete stockpile will be generated as part of the enabling works to ready the site for redevelopment.

This document forms a method statement and factory production control plan (FPCP) system for the manufacture of aggregates from inert waste in accordance with "Quality Protocol, Aggregates from inert waste, and end of waste criteria for the production of aggregates from inert waste" document issued by the Waste & Resources Action Programme (WRAP), at the Victoria site.

A crusher to produce the aggregate will be supplied and operate under a Part B Environmental Permit, as issued by the local authority where the crusher is based (in this case, Brent).

The materials will be processed to produce an end product which will reduce the need for imported hard materials/aggregates for use on site. The end product produced from this activity will be a 6F2 aggregate, which is site generated selected granular material for BAM to use.

Production will be undertaken in accordance with BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction.

The Factory Production Control Plan (FPCP) system monitors production to ensure that characteristics of the aggregate produced are achieved and maintained and that nonconforming product is managed. The FPCP system will cover:

- Responsibilities and management
- Controls – procedures, documents and data
- Managing production and stockpiles
- Inspection and testing
- Record keeping
- Controlling nonconforming product
- Handling and storage
- Training

2 Waste Acceptance Procedures

2.1 Background

This section provides a broad summary of the aggregate production process. PRL will operate a crushing activity as part of the enabling works project, at the following site:

NT02 to NT04
Manchester Victoria
Off Dantzic St
Manchester
M4 4DD

The materials to produce aggregates will be sourced from on site. Source materials will be inert and classified as oversized EWC 17 01 07 - mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06. All materials will come from foundations and slabs from within the site.

Following visual inspection, the concrete waste will be transported to the processing area, where it will be checked for compliance against the WRAP Protocol Adherence Record prior to aggregate production.

Only materials, which do not exhibit any significant visual or olfactory evidence of contamination, which have been recovered from areas of the site that have been found not to be significantly contaminated would be considered potentially suitable for re-use on site and hence acceptable for this protocol. Checks will be carried out by a competent person(s)

Table 2. Waste Classification Codes.

Waste code	Description
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	concrete, bricks, tiles and ceramics
17 01 01	Concrete
17 01 02	Bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	soil and stones
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07	track ballast of than those mentioned in 17 05 07

Only inert wastes in accordance with European Directive 2003/33/EC will be accepted for processing. No liquid waste, wastes consisting solely of dusts, powders or loose fibres or non-hazardous and hazardous materials will be utilised in the production of aggregate in accordance with this protocol.

1.1.1 General Basic Characterisation for All Wastes

The characterisation of the material will be carried out prior to crushing and will include the following:-

- Source and origin of material, with associated evidence such as Site Investigation reports, Soil Analysis/Testing Certificates, previous site history etc. will be checked.
- The description of the waste material;
- Volume and dates the waste is expected from the Producer;
- Visit(s) to the Producer site to inspect waste, as required to assess its appearance (including its smell, colour, consistency and physical form)

2.1.1 Potentially Contaminated Wastes

The acceptability of wastes from varied sources which are potentially contaminated must be demonstrated through review of Desk Study and Ground Investigation reports and site information to determine the potential for contaminated waste.

As a minimum the source soils must be subject to a basic characterisation testing suite, as follows:-

- Arsenic, Cadmium, Chromium, Hexavalent Chromium, Copper, Lead, Mercury, Nickel, Selenium, Zinc, Speciated PAH, Speciated TPH (CWG) and asbestos screening.
- All waste should be free from non-hazardous and organic inclusions such as wood, plastic, vegetation and metal. Hazardous and non-hazardous wastes will be excluded.
- Chemical Samples will be taken every 250m3 of processed material.

1.1.2 On-site Compliance

The Operator will undertake visual / olfactory assessments of the material prior to it being crushed on site. Any waste or material suspected to be potentially contaminated and deviating from prior acceptability testing shall be either rejected from site or quarantined onsite for further assessment by the Site Manager. For the purposes of this assessment, potentially contaminated materials include:-

- Odorous solids and liquids;
- Highly coloured materials;
- Oily / hydrocarbon impacted materials;
- Putrescible or fuming materials;
- Asbestos or suspected asbestos containing materials; and
- General aesthetics / quantity of contraries such as metal, plastic and wood inclusions.

If there are any concerns regarding the material, then the crushing operations will be stopped until the material can be fully checked by a competent person.

Compliance check records (Appendix A) will be undertaken by a competent person and ensure that sufficient checks and testing has been carried out.

2.2 Desk Based Review

The various reports on intrusive ground investigation 4328-ROC-ZZ-XX-RP-ES-P2-101 FINAL R3 undertaken at the site were reviewed by appropriately qualified and experienced members of the project team to confirm the following:

- Areas of potential ground contamination based on historic usage
- Nature and extent of the identified/recorded contamination profile
- Location and extent of former surface and structures.

2.3 Watching Brief

Relevant materials handling and key elements of the slab and foundations removal and general earthworks are undertaken under supervision by an appropriately qualified experienced team member.

Field Screening: to verify visual and olfactory observations, samples of materials are periodically recovered and subjected to a field screening test. This involves visual and olfactory inspection of the concrete material for presence of hydrocarbons and asbestos containing materials.

This initial segregation process is based on visual and olfactory observations. As the materials are stored prior to crushing, the site manager/foreman/engineer will inspect/monitor the materials to determine the presence of any timber or plastic within the excavated material which will be removed by hand and stored separately for recovery off site.

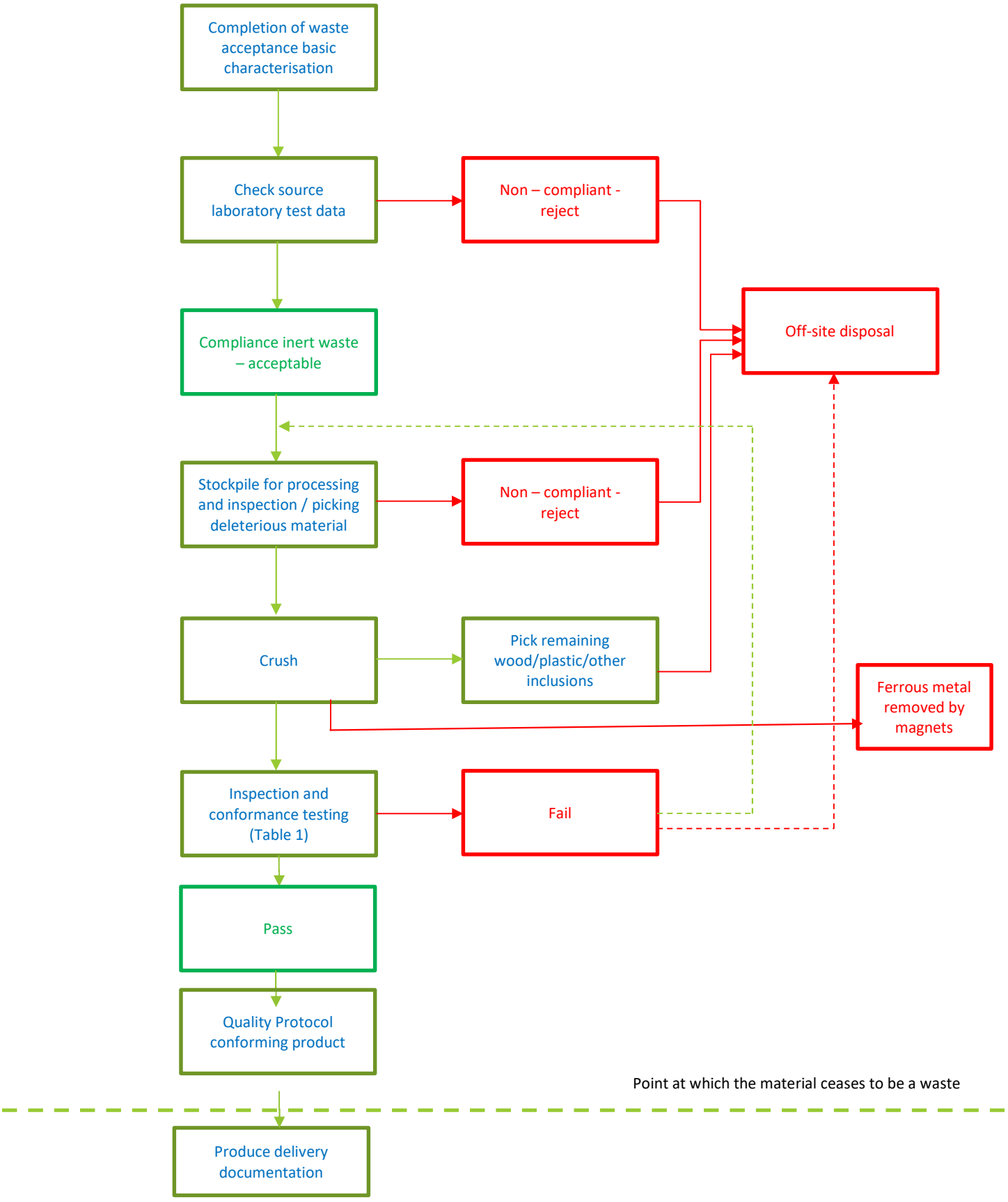
- Once visually checked, the resulting material is then loaded into a concrete crusher (which has been pre-set to the desired end product grade) using a tracked 360 excavator. Note that the crushing plant will only be operated by suitably competent person(s) who has received the relevant training from an appropriately accredited provider.

- Once the material has been crushed, a revolving magnet is passed over the material as it is released from the crusher to the discharge belt which will act to remove any metal material that was not initially picked out of the waste. The resulting metals will be deposited into a skip and bulked prior to removal from site for onwards recovery.

- Any additional wood and plastic debris [where present] entrained within the screened/final product will also be removed and placed in skips for removal from site for onwards recovery or disposal.

- The crushed aggregate material is tested both chemically and geo-technically for suitability for reuse. Grading analysis will ensure that the material meets 6F2 grading standards.

Figure 1 - Aggregate Production Schematic



3 Product Quality Assurance

3.1 Systems & Process

Product quality is checked at a number of points as detailed below:

1 A rigorous programme of surveillance monitoring [visual and olfactory] is maintained by machine drivers/operatives, engineers and site managers to ensure that significant quantities of plastic, wood oversize materials and / or potentially contaminated materials are not entrained within the crushed product stream.

2 Field screening (as above) of potentially suitable raw hard materials and crushed recovered aggregates is completed to verify that contaminated materials are not incorporated into material stockpiles for reuse on site (export if required).

3 Samples of the end product are recovered and dispatched to a third party laboratory for a variety of chemical and physical/geotechnical tests to confirm that the products conform to the required standard and meet the requirements of this WRAP document.

The aggregate product will be subject to conformance testing in accordance with Table 3.

Table 3, Conformance Testing Requirements

Property	**BS EN test method**	**Product Standard/Specification**	**Frequency**
Grading	BS EN 933-1	BS EN 13242 Aggregates for unbound and hydraulically bound mixtures	1 per 500m3
Particle shape	BS EN 933-3 and BS EN 933-4	BS EN 13242 Aggregates for unbound and hydraulically bound mixtures	1 per 1000m3
Particle density	BS EN 1097-6	BS EN 13242 Aggregates for unbound and hydraulically bound mixtures	1 per 1000m3
Constituent parts	BS EN 933-11	BS EN 13242 Aggregates for unbound and hydraulically bound mixtures	1 per 1000m3
Chemical Analysis		MCERTS	1 per 250m3

Samples will be collected by the Site Technician and given a unique identification. All testing will be carried out by a UKAS/MCERTS accredited laboratory.

The laboratory reports will highlight whether or not the tested products conform to specific material/product standards. The test frequency indicated above may be increased in certain circumstances e.g. on an occasion where three consecutive failures/non-conformances have been determined for a certain specification or if there were any concerns regarding a particular source of the feedstock materials.

4 The analytical reports are reviewed to confirm that the required standard is met. Once satisfactory analytical and materials testing reports are provided, the stockpiled materials are considered compliant and the materials may then be deemed fully recovered and the aggregate ceases to be deemed a waste.

5 Suitable work equipment and facilities are provided and maintained to allow work activities to be undertaken safely and effectively without comprising product quality.

6 Plant and equipment is only operated and maintained by competent persons who have received relevant training.

7 All equipment used for monitoring and measuring purposes is controlled to ensure that it is adequate for the purpose and only utilised by competent persons.

8 Results of monitoring and testing will be reviewed regularly to ensure compliance with the conditions of the WRAP Protocol.

3.2 Product Non-Conformance

Potential issues associated with product and required corrective actions are outlined in Table 2 below.

Table 2.

Product Non-Conformance	**Corrective Action**
Deleterious Materials: Wood, Plastic and Metals	In the event that the final product contains non-conforming material, this material will be segregated/quarantined and increased inspection of the material will be undertaken with additional resorting and repicking as required. The level of supervision and staffing requirements for the watching brief and picking crew will be reviewed and any improvements required will be implemented immediately. The machinery including the magnet will be inspected to verify that the equipment is performing and is fit for purpose.
Visual & Olfactory Evidence of Contamination Visible Asbestos fragments	In the event that the final product contains visual and olfactory evidence of contamination, the material will be segregated/quarantined and increased inspection of the material will be undertaken with additional resorting and repicking as required. The level of supervision and staffing requirements for the watching brief and picking crew will be reviewed and any improvements required will be implemented immediately.

	The importation of input material from the site source area will cease immediately and further investigations of the source will be undertaken.
Materials Testing Failure	The material will be quarantined and the laboratory results will be reviewed and the stockpiled material will be inspected and resampled if required. Consideration will be given to recovering additional samples or down grading the classification of recovered product. Material may be reprocessed (crushed)
Chemical Testing	Results will be verified with the laboratory. Materials will be segregated / quarantined and inspected. Additional Samples may be taken and the material re-tested. If the material remains unsuitable, it will be downgraded and evaluated for suitability for re – use on site. If unsuitable, it will be disposed of off-site to an appropriately licensed facility. The analytical suite is included with the appendices

3.3 Maintenance

All plant utilised in the production process is operated and maintained in line with the manufactures guidelines. Where plant is hired in from a subcontractor, it is a company requirement to complete/review a Plant Inspection Report to verify that the plant/equipment is in a safe and satisfactory condition and is fit for use.

3.4 Sample referencing examples

6F2-AR-A1--26/4.S1

Part 1 - 6F2 Indicates candidate product specification.
Part 2 - Area “NT03” etc, if required
Part 3 - 26/4 – Recovered and sampled XXXX date
Part 4 - Sample “6F2 Crush XX”

This referencing system is then used on all chain of custody forms accompanying the samples despatched to the selected analytical laboratory and materials testing laboratory upon receipt of the chemical and materials testing results, the data is reviewed by a member of the technical team or appropriately trained member of the operations team in conjunction with the results of the field testing/screening. If the material is found to conform to the required product specification, it is assigned ‘approved batch’ status. Recovered product within the segregated stockpile is then assigned the appropriate reference, which is then used in conjunction with a load reference to form a unique five element reference number. Copies of all results of field screening,

chemical and materials testing are maintained within a file for each approved batch, within the site office.

3.5 Safety and Environmental Measures

1 Environmental monitoring with be undertaken to measure noise and dust levels during the crushing operations. Baseline readings will be recorded prior to crushing activities to identify background readings.

2 Dust suppression measures will be put in place in case excessive dust particulates become airborne, especially during drier and windy periods

3 All operatives working in the area must wear the correct PPE and during crushing operations, adequate RPE must be worn at all times.

4 Appropriate exclusions zones will be set up around the crusher to segregate operatives working in the area from entering the crushers working zone.

Appendices

Chemical analytical suite

G.2 Provectus WRAP verification July 2026

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Integrated Expertise, Proven Delivery

3rd July 2026

FAO: Andy Campbell

Sent via email:andrew.campbell@bam.com

Dear Andy

Addendum Letter Report, Quality Plan for Aggregate Production

Victoria North NT02 to NT04

This letter report is intended as an addendum to the Provectus Remediation Ltd report "Victoria North NT02 to NT04, Factual report covering works April to October 2024", issued January 2025. This addendum is specific to the Quality Plan for the aggregate production on the site.

1 Initial Material Acceptance

As noted in the validation report, a large volume of oversize material consisting of concrete and brickwork were generated during the demolition and removal of existing floor slabs and buried obstructions. These were transferred under a watching brief by Provectus to a north central portion of the NT03 site to await crushing.

This watching brief inspected the source materials for any visual or olfactory evidence of potential contamination. Materials were inspected for possible asbestos-containing materials, suspect odours, hydrocarbon impacted materials, highly coloured materials as well as inclusion of general detritus including metal, plastic and timber. The watching brief did not identify any such indicators of potential contamination as the materials were excavated and transported.

Provectus considered that the materials available for crushing following inspection would attract an EWC code of 17 01 07, therefore complying with the requirements of the Quality Plan produced.

Although a small portion of the site was impacted with TCE contamination, this impact was present within soils at the southern end of NT02, significantly below the demolished floor slabs: significant buried obstructions were not encountered within this southern area.

2 Materials not included within Provectus crushing activities

An additional ~350m3 of crushed material was produced by 3rd parties following the original demolition of the buildings: this material was left in a stockpile on the northern portion of NT02. These works were undertaken prior to Provectus attending site.

Tarmac was stripped from the site surface as part of the demolition and site clearance works, and stockpiled and disposed of separately,

Additional oversized materials were encountered during excavations undertaken following the demobilisation of the crusher from the site. These materials were exported for crushing off site by a 3rd party and equated to an additional 59 loads of materials.

3 Production Process

Following the stockpiling of the suitable materials PRL commenced aggregate production in July 2024, which resulted in the formation of 3,219m3 of 6F2 material.

The crusher to produce the aggregate was supplied by Hunter Plant Hire Ltd and operated under a Part B Environmental Permit, as issued by the local authority where the crusher is based (in this case, Brent). A copy of the Permit is appended to this document (Appendix A).

The materials were processed to produce an end product which would reduce the need for imported hard materials/aggregates for use on site. The end product produced from this activity was a 6F2 aggregate, which is site generated selected granular material for BAM to utilise within the development.

Production was undertaken in accordance with BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction.

3.1 On-site Compliance

As crushing activities progressed the water spray bars on the crusher and task specific dust suppression was utilised to prevent the release of nuisance dust from the processing activity.

Crushing activities were completed during the sites prescribed working hours, to prevent nuisance noise being generated.

3.2 Inspection and testing

The 6F2 was produced at the site in accordance with The Provectus WRAP protocol issued in July 2024 prior to the start of the 6F2 production. In accordance with this protocol, chemical and geotechnical samples were collected and subjected to laboratory testing as the 6F2 was produced and stockpiled.

A total of 27 samples were collected and submitted for chemical and/or geotechnical analyses. Sampling was undertaken by an experienced Provectus Engineer and dispatched to a suitably accredited laboratory for testing under appropriate Chain of Custody documentation.

All samples are summarised within Table 1 below, and are appended to this document (Appendix B):

Table 1 Laboratory Testing Tracker.

Sample ID	Sample type (Chemical/Geotechnical)	Report number	Asbestos detected?	Notes and/or action taken
6F2 crush	Chemical	24-031424	N	Initial 6F2 sample
6F2 PSD	Geotechnical	C1087613 / 303457.7.1.1	n/a	
6F2 crush 1	Chemical	24-033073	N	
6F2 crush 2			Y <0.001% chrysotile	Positive sample required further investigation, see samples "6F2 crush 4 to 7"
6F2 crush 3			N	
6F2 crush 4	Chemical	24-034565	N	Collected from wider stockpile
6F2 crush 5			N	Collected from wider stockpile
6F2 crush 6			Y 0.002% amosite	Samples collected from the immediate vicinity of "6F2 crush 2". Material subsequently removed and stockpile resampled
6F2 crush 7			Y 0.004% chrysotile	
6F2 pre-crush 1			N	Collected from pre-crushed concrete
6F2 pre-crush 2			N	
6F2 pre-crush 3			N	
6F2 crush 8	Asbestos only	24-038721	N	Collected from immediate vicinity of "6F2 crush 2, 6 and 7"
6F2 crush 9			N	
6F2 crush 10			N	
6F2 crush 11	Chemical		N	
6F2 crush 12	Chemical		N	Collected from stockpile
6F2 crush 13	Asbestos only	24-038721	N	Collected from stockpile
6F2 crush 14			N	Collected from stockpile
6F2 crush 15			N	Collected from stockpile
6F2 crush 16			N	Collected from stockpile
6F2 crush 17			N	Collected from stockpile
6F2 280524 A	Geotechnical	24-039018-1	n/a	
6F2 280524 B				
6F2 280524 C				
6F2 280524 D				
6F2 280524 E				

3.3 Quality Control

Results obtained from the laboratory analysis completed were compared with the criteria identified within the Quality Plan.

Geotechnical testing confirmed the materials sat within the grading envelope for a 6F2 material.

The chemical testing was assessed against the 'Guidance on the classification and assessment of waste (1st Edition v1.2.GB) Technical Guidance WM3'. None of the samples obtained post processing were identified as containing Hazardous substances with respect to waste classification, and as such the material was considered acceptable in terms of the Quality Protocol.

Chemical testing identified the presence initially of asbestos fibres within a single sample, further investigation and laboratory testing identified a further two samples as containing asbestos fibres. All three sample were located in close proximity to each other. These detections of asbestos were considered to represent non-conforming materials and appropriately quarantined to ensure they were not released for use. Further discussion on these non-conforming materials is presented below in Section 3.4.

Materials were also visually inspected by the Provectus Engineer for non-compliant materials, including timber, plastic etc. None were identified.

3.4 Out of specification materials – Discussion

As detailed above in Section 3.3 initial testing of the material identified a single sample ("6F2 Crush 2", Report 24-033073) returned a positive result for chrysotile asbestos fibres (<0.001%). Samples "6F2 Crush 1 and 3" collected from elsewhere in the stockpile did not reveal the presence of asbestos fibres.

Subsequent additional sampling of a further four samples from this Crush 2 sample area of the stockpile and across the greater stockpile was completed. Samples "6F2 Crush 6 and 7" (Report 24-034565) were collected from the immediate vicinity of "6F2 Crush 2". These two samples revealed the presence of amosite fibres (0.002%) and chrysotile fibres (0.004%), respectively.

Samples collected at the same time from outside the immediate vicinity of these three positive presences of asbestos fibres, and those obtained from materials prior to crushing activities, did not reveal the presence of any asbestos ("6F2 Crush 4 and 5" and "6F2 pre-crush 1 to 3", Report 24-034565).

Review of the analysis established a small hotspot of 6F2 with low-level asbestos impact which was non-compliant, and the distinct impacted section of the stockpile was segregated form the remainder. Further sampling of this portion of the stockpile ("6F2 crush 8 to 11" Report 24-038721) confirmed its removal. Additional sampling of the rest of the completed stockpile as it was produced ("6F2 crush 12 to 17", Report 24-038721) also confirmed the absence of asbestos.

The circa 10m3 of segregated non-compliant material, was disposed of from site as waste.

3.5 Quality Protocol conforming product

Based upon the chemical and geotechnical analyses summarised within Table 1 and included within the appendices of this addendum, the 6F2 generated on site sat within the grading envelope for a 6F2 as identified within the Series 600 Highways Spec.

Assessment of chemical analysis did not identify the materials as 'Hazardous' with respect to waste classification.

Chemical analysis identified the presence of asbestos fibres within selected samples which Provectus considered to be non-compliant with the Quality Protocol.

Those non-compliant materials identified as containing asbestos fibres were segregated and removed from site. The remaining materials were considered complaint.

3.6 Produce delivery documentation

The conforming materials generated were made available for use.

A portion of this material was used to construct a temporary pile mat plus access road across the southern portion of NT03 and NT04. An estimated volume used for this pile mat plus the levelling of the access road is circa 200m3.

BAM transferred 100 loads of this material to the BAM HIF site on the opposite bank of the River Irk for use in upfilling works.

The remaining volume of 6F2 was left on site for future use.

We trust the above and attached is clear.

Kind regards

[redacted]

Jonathan Russell

Remediation Project Manager

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Appendix A – Crusher Permit

PERMIT TO OPERATE A PLANT FOR THE CRUSHING, GRINDING OR OTHER SIZE REDUCTION, OF BRICKS, TILES OR CONCRETE

Pollution Prevention and Control Act 1999

Environmental Permitting (England and Wales) Regulations 2010 (As Amended)

Installation Address

Hunter Plant Hire Ltd, 641 North Circular Road, London NW2 7AY

Permit Reference

HP/04064-13/v4

Introduction

The London Borough of Brent (the Regulator) in exercise of its powers under Regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010 (S.1.2010 No. 675) hereby permits **Hunter Plant Hire Ltd,** (the operator) to operate mobile plant for the crushing, grinding, screening or other size reduction of bricks, tiles or concrete as described in Part B of Section 3.5 of Part 2 of Schedule 1 of those Regulations, in accordance with the conditions detailed in this Permit.

The Secretary of Sates Guidance Process Guidance Note 3/16 (12) - Statutory guidance for mobile crushing and screening has provided the framework for the conditions appropriate for controlling of emissions into air.

Permit Number:
HP/04064/13/v4

Registered office address:
Hunter Plant Hire Ltd, 2 Mountside, Stanmore, Middlesex, HA7 2DT

Address of installation:
Hunter Plant Hire Ltd, 641 North Circular Road, London NW2 7AY

Signed  Dated: 16/08/2023

Peter Hayden

Environmental Monitoring Officer

Contact Details
Environmental Monitoring Team
5th Floor Civic Centre
Engineers Way
Wembley, Middlesex
HA9 0FJ

Ens.monitoring@brent.gov.uk

Tel: 020 8937 5252

Activities Authorised by this Permit:

- The crushing, grinding or other size reduction, of bricks, tiles or concrete as described in paragraphs (c) and (d) of Part B of Section 3.5 of Part 2 of Schedule 1 of the regulations.

Plant authorised by this permit:

Plant type	Make and Model	Serial Number
Crusher	Kleeman MC110R EVO	50047
Crusher	McCluskey J40	77999
Screener	Maximus 512 Track Screener	3DO4M5122014

Asbestos

1. Asbestos shall not be crushed or screened.

Notifications

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

Emissions and monitoring

3. No visible particulate matter shall be emitted beyond the installation boundary.

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

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

Crushers and screening units

6. Crushers shall be fitted with a water suppression system over the crusher aperture and on the discharge conveyor.

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

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

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

Loading, unloading and transport

10. No potentially dusty materials (including wastes) or finished products shall arrive on or leave the site other than by use of sheeted lorry.

Roadways and transportation

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

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

Records and training

13. Written or computer records of all tests and monitoring shall be kept by the operator for at least 24 months. They shall be made available for examination, on request, by the Council. Records shall be kept of operator inspections, including those for visible emissions.

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

Best available techniques

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

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

Table 1 - Emission limits, monitoring and other provisions

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

END OF CONDITIONS

Further Information

(This guidance does not form part of the Permit, but it is for the guidance of those given a Permit).
Further guidance can be found in the PPC General Guidance Manual at https://www.gov.uk/government/collections/defra-guidance-on-local-authority-pollution-control-lapc-regime

Confidentiality
The Permit requires the Operator to provide information to the London Borough of Brent. The Council will place the information onto the public registers in accordance with the requirements of the EP Regulations. If the Operator considers that any information provided is commercially confidential, it may apply to the London Borough of Brent to have such information withheld from the register as provided in the EP Regulations. To enable London Borough of Brent to determine whether the information is commercially confidential, the Operator should clearly identify the information in question and should specify clear and precise reasons.

Changes to the installation
Operators are strongly advised to notify the regulator of any significant changes to the installation (including technical alterations or modifications in operational or management practices, including changes to raw materials or fuels used and to the installation throughput). Similarly, operators are strongly advised to notify the regulator if at any time the installation, or any aspect of the installation regulated by this Permit changes such that the Permit no longer reflects the installation and requires alteration. Operators will be liable to enforcement action if they make a change without approval, which is such that either the installation (as changed) is no longer the installation that is authorised in the Permit or a condition of the Permit is not being complied with as a result of the change being made.

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

Surrender of the permit
Where an Operator intends to cease the operation of an installation (in whole or in part) the regulator should be informed in writing, such notification must include the information specified in regulation 24 of the EP regulations.

Transfer of the permit or part of the permit
Before the Permit can be wholly or partially transferred to another person, a joint application to transfer the Permit has to be made by both the existing and proposed holders, in accordance with Regulation 21 of the EP Regulations. A transfer will be allowed unless the Authority considers that the proposed holder will not be the person who will have control over the operation of the installation or will not ensure compliance with the conditions of the transferred Permit. Depending on the type of installation and the nature of the transfer, fees may be payable. A standard transfer form is available from the regulator.

Health, safety and other statutory requirements
This permit is given in relation to the requirements of the EP Regulations. It must not be taken to replace any responsibilities you may have under workplace Health and Safety legislation. This permit does not detract from any other statutory requirement such as any need to obtain

planning permission, hazardous substances consent, or discharge consent from the Environment Agency, building regulations approval or a Waste Disposal Licence.
Disposal of waste should be carried out in a safe and proper manner at a waste disposal facility, the operator of which holds a licence to dispose of the appropriate type of waste.

Appeal against permit conditions
Anyone who is aggrieved by the conditions attached to a Permit can appeal to the Secretary of State for the Environment, Food and Rural Affairs. Appeals must be made in accordance with the requirements of Regulation 31 and Schedule 6 of the EP regulations.

Appeals should be received by the Secretary of State for Environment, Food and Rural Affairs. The address is as follows:

The Planning Inspectorate
Environment Team, Major & Specialist Casework
Room 4/04 Kite Wing
Temple Quay House
2 The Square
Temple Quay
Bristol BS1 6PN

Tel: 0117 372 8726
Fax: 0117 372 8139

Please Note
An appeal bought against the conditions in a permit will not suspend the effect of the conditions appealed against; the conditions must still be complied with. Appeals against variation, enforcement and suspension notices do not stop the notices coming into effect. However, appeals against revocation notices suspend the operation of the notices coming into effect until the appeal is decided or withdrawn.

In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority either to vary any of these other conditions or to add new conditions.

PROVECTUS
Integrated Expertise, Proven Delivery

Appendix B – Laboratory Analysis

Provectus Group
200 Brook Drive
Green Park
Reading
RG2 6UB

[redacted]

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 : 24-031424

Project / Site name:	Victoria North	**Samples received on:**	18/07/2024
Your job number:	101221	**Samples instructed on/ Analysis started on:**	18/07/2024
Your order number:	11181	**Analysis completed by:**	24/07/2024
Report Issue Number:	1	**Report issued on:**	24/07/2024
Samples Analysed:	4 soil samples		

Signe[redacted]

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

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.

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: 24-031424
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				260854	260855	260856	260857
Sample Reference				export 160724 HAZ	export 170724 HAZ	6F2 crush	TLE TP1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				16/07/2024	17/07/2024	16/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	15	9.3	15
Total mass of sample received	kg	0.1	NONE	1	1	0.8	0.9
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	IZJ	-
General Inorganics							
Loss on Ignition @ 450°C	%	0.2	MCERTS	10	13	-	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-	-	0.73	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	0.09	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	1.5	-
Fluorene	mg/kg	0.05	MCERTS	-	-	1.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	7.8	-
Anthracene	mg/kg	0.05	MCERTS	-	-	2.2	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	10	-
Pyrene	mg/kg	0.05	MCERTS	-	-	9.6	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	3.8	-
Chrysene	mg/kg	0.05	MCERTS	-	-	3.9	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	4.4	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	1.8	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	3.9	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	1.9	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	0.39	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	2.1	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	55.6	-
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	19	10	-
Boron (water soluble)	mg/kg	0.2	MCERTS	22	7	0.5	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	6.8	11	0.5	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	130	130	19	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	1900	3800	44	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	690	770	76	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	4.3	3.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	140	170	15	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	4100	4300	140	-

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Analytical Report Number: 24-031424
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				260854	260855	260856	260857
Sample Reference				export 160724 HAZ	export 170724 HAZ	6F2 crush	TLE TP1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				16/07/2024	17/07/2024	16/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.02	MCERTS	-	-	< 0.020	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.02	MCERTS	-	-	< 0.020	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.05	MCERTS	-	-	< 0.050	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	-	4.9	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	27	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	-	200	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	-	230	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.05	MCERTS	-	-	< 0.050	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	-	2	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	-	14	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	53	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	-	170	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	-	240	-
TPH (EC10 - EC40) $_{EH_CU_1D_TOTAL}$	mg/kg	10	MCERTS	2200	1100	-	-
VOCs							
Chloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Chloroethane	µg/kg	5	NONE	-	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	< 5.0
Chloroform	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0 ##
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	170
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	-	< 5.0

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Analytical Report Number: 24-031424
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				260854	260855	260856	260857
Sample Reference				export 160724 HAZ	export 170724 HAZ	6F2 crush	TLE TP1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				16/07/2024	17/07/2024	16/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Bromoform	µg/kg	5	NONE	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	< 5.0
Bromobenzene	µg/kg	5	NONE	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0

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

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Analytical Report Number : 24-031424
Project / Site name: Victoria North

* 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 *
260854	xport 160724 HA	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
260855	xport 170724 HA	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
260856	6F2 crush	None Supplied	None Supplied	Brown sand with gravel and brick
260857	TLE TP1	None Supplied	None Supplied	Brown clay

Analytical Report Number : 24-031424
Project / Site name: Victoria North

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/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

Analytical Report Number : 24-031424
Project / Site name: Victoria North

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
AR	Aromatics				
#1	EH_2D_Total but with humics mathematically subtracted				
#2	EH_2D_Total but with fatty acids mathematically subtracted				
_	Operator - underscore to separate acronyms (exception for +)				
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total				

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

- 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.

Provectus Group
200 Brook Drive
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[redacted]

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Analytical Report Number : 24-033073

Project / Site name:	Victoria North	**Samples received on:**	26/07/2024
Your job number:	101221	**Samples instructed on/ Analysis started on:**	26/07/2024
Your order number:	11181	**Analysis completed by:**	01/08/2024
Report Issue Number:	1	**Report issued on:**	01/08/2024
Samples Analysed:	4 soil samples		

Signed: [redacted]

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.

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: 24-033073
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				270074	270075	270076	270077
Sample Reference				export 220724	6F2 crush 1	6F2 crush 2	6F2 crush 3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				22/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	43.4	35.8	38.1
Moisture Content	%	0.01	NONE	7.3	5.4	6.3	6.2
Total mass of sample received	kg	0.1	NONE	1.2	1.1	1.1	1.1
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	KSZ	KSZ	KSZ
Actinolite detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	-	-	Not-detected	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	< 0.001	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	Loose Fibres	-
General Inorganics							
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.8	-	-	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-	0.32	0.19	0.22
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.33	0.44	0.44
Fluorene	mg/kg	0.05	MCERTS	-	0.26	0.33	0.35
Phenanthrene	mg/kg	0.05	MCERTS	-	2.1	2.2	2.5
Anthracene	mg/kg	0.05	MCERTS	-	0.63	0.6	0.67
Fluoranthene	mg/kg	0.05	MCERTS	-	3.2	2.9	3
Pyrene	mg/kg	0.05	MCERTS	-	2.9	2.7	2.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.3	1.2	1.3
Chrysene	mg/kg	0.05	MCERTS	-	1.5	1.2	1.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	1.4	1.4	1.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.78	0.57	0.54
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.4	1.3	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.7	0.77	0.75
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.17	< 0.05	0.15
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.78	0.82	0.89
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	17.6	16.6	17.7

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Analytical Report Number: 24-033073
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				270074	270075	270076	270077
Sample Reference				export 220724	6F2 crush 1	6F2 crush 2	6F2 crush 3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				22/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	8.8	8.6	9.7
Boron (water soluble)	mg/kg	0.2	MCERTS	4.6	1.2	0.8	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.5	0.5	0.5
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	18	19	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	200	56	45	46
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	95	75	88
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	14	14	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	200	120	140
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	< 1.0	1.2	1.2
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	24	26	16
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	65	90	51
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	280	470	250
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	370	590	310
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	1.6	2.7	1.6
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	15	10	11
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	60	64	54
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	240	250	210
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	320	330	270
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	110	-	-	-
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0

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

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Analytical Report Number: 24-033073
Project / Site name: Victoria North
Your Order No: 11181

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 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
270076	6F2 crush 2		169	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

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

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Analytical Report Number : 24-033073
Project / Site name: Victoria North

* 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 *
270074	export 220724	None Supplied	None Supplied	Brown loam and clay with gravel and plastic
270075	6F2 crush 1	None Supplied	None Supplied	Brown loam with plastic and stones
270076	6F2 crush 2	None Supplied	None Supplied	Brown loam with vegetation and stones
270077	6F2 crush 3	None Supplied	None Supplied	Brown loam with vegetation and stones

Analytical Report Number : 24-033073
Project / Site name: Victoria North

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS

Analytical Report Number : 24-033073
Project / Site name: Victoria North

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 petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/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).
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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Analytical Report Number : 24-034565

Project / Site name:	Victoria North	**Samples received on:**	05/08/2024
Your job number:	101221	**Samples instructed on/ Analysis started on:**	05/08/2024
Your order number:	11181	**Analysis completed by:**	14/08/2024
Report Issue Number:	1	**Report issued on:**	14/08/2024
Samples Analysed:	12 soil samples - 1 water sample		

Signed: [redacted]

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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 are representative of the samples submitted for analysis.

Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277948	277949	277950	277951	277952
Sample Reference				ash fill 5	ash fill 6	ash fill 7	ash fill 8	6F2 crush 4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/08/2024	01/08/2024	02/08/2024	02/08/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	100
Moisture Content	%	0.01	NONE	14	12	13	13	4.3
Total mass of sample received	kg	0.1	NONE	0.8	0.9	1	0.9	0.9
Whole Sample Crushed	N/A	N/A	NONE	-	-	-	-	-
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	KWB
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.4	0.28	0.52	0.11	0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.1	< 0.05	0.18
Acenaphthene	mg/kg	0.05	MCERTS	0.79	0.48	1.9	0.27	0.39
Fluorene	mg/kg	0.05	MCERTS	0.62	0.49	1.4	0.21	0.37
Phenanthrene	mg/kg	0.05	MCERTS	5.2	4.2	11	1.7	4.4
Anthracene	mg/kg	0.05	MCERTS	1.8	1.6	4.4	0.5	1.1
Fluoranthene	mg/kg	0.05	MCERTS	8.8	7.8	19	2.5	9.4
Pyrene	mg/kg	0.05	MCERTS	8.2	7.9	17	2.4	7.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.3	3.6	7.5	1	3.7
Chrysene	mg/kg	0.05	MCERTS	3.5	3.9	7.9	1.1	3.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	4.1	4.7	8	1.2	4.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.9	1.7	4.2	0.72	1.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.5	4.3	7.8	1.2	3.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.8	2.4	4.2	0.55	1.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.37	0.43	0.86	0.12	0.47
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.1	2.8	4.7	0.66	1.9
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	46.2	46.5	101	14.2	44.1

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277948	277949	277950	277951	277952
Sample Reference				ash fill 5	ash fill 6	ash fill 7	ash fill 8	6F2 crush 4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/08/2024	01/08/2024	02/08/2024	02/08/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	26	19	26	10	13
Boron (water soluble)	mg/kg	0.2	MCERTS	7.9	8.5	8	0.6	3.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.9	1.2	0.5	0.5
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	35	42	27	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	190	200	290	70	59
Lead (aqua regia extractable)	mg/kg	1	MCERTS	460	1200	580	180	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.4	0.6	0.8	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	29	33	16	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	320	350	500	140	210
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	43	55	28	33	9.8
TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	110	170	99	110	36
TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	280	980	550	350	260
TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	430	1200	680	490	310
TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	3	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	35	28	28	12	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	140	180	200	64	44
TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	330	680	520	250	150
TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	500	890	750	320	200
VOCs								
Chloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	< 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
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Chloroform	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277948	277949	277950	277951	277952
Sample Reference				ash fill 5	ash fill 6	ash fill 7	ash fill 8	6F2 crush 4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				01/08/2024	01/08/2024	02/08/2024	02/08/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 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
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Bromoform	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	-

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

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277953	277954	277955	277956	277957
Sample Reference				6F2 crush 5	6F2 crush 6	6F2 crush 7	6F2 pre-crush 1	6F2 pre-crush 2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	49.3	59.9	36.4	87.4	100
Moisture Content	%	0.01	NONE	4.2	3.9	5.4	0.93	2
Total mass of sample received	kg	0.1	NONE	0.8	0.8	1	2	2
Whole Sample Crushed	N/A	N/A	NONE	-	-	-	Crushed	Crushed
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	MWI	MWI	MWI	MWI
Actinolite detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-
Amosite detected	Type	N/A	ISO 17025	-	Detected	Not-detected	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	Not-detected	Detected	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-
Tremolite detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	0.002	0.004	-	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	Loose Fibrous Debris	Loose Fibres	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.12	0.31	0.24	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.36	1.4	0.54	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.26	1.2	0.42	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.2	8.6	3.6	0.18	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.6	2.5	0.95	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.3	11	5	0.23	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.1	9.3	4.6	0.21	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.3	4	1.9	0.07	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.4	3.9	2.1	0.1	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.4	4.2	2.3	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.82	1.9	1	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.4	4	2.1	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.65	1.7	1	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.13	0.32	0.2	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.77	2	1.2	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	17.8	56.2	27.3	< 0.80	< 0.80

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277953	277954	277955	277956	277957
Sample Reference				6F2 crush 5	6F2 crush 6	6F2 crush 7	6F2 pre-crush 1	6F2 pre-crush 2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	10	9.7	8.4	4.3
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	1.7	2.1	0.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.5	0.7	0.3	0.6
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	27	23	42	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	47	78	36	7.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	62	61	110	8.3	8.1
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	16	15	16	31	7.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	100	280	31	29
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	1.4	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	13	18	91	19	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	50	79	200	140	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	250	330	420	860	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	310	420	710	1000	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	3	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	6.5	16	38	7.3	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	42	87	110	39	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	200	230	290	130	< 10
TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	240	340	440	170	< 10
VOCs								
Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277953	277954	277955	277956	277957
Sample Reference				6F2 crush 5	6F2 crush 6	6F2 crush 7	6F2 pre-crush 1	6F2 pre-crush 2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
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
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

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

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277958	277959
Sample Reference				6F2 pre-crush 3	arch stock
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				26/07/2024	02/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Stone Content	%	0.1	NONE	100	< 0.1
Moisture Content	%	0.01	NONE	1.6	3.2
Total mass of sample received	kg	0.1	NONE	2	1
Whole Sample Crushed	N/A	N/A	NONE	Crushed	-
Asbestos					
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MWI	-
Actinolite detected	Type	N/A	ISO 17025	-	-
Amosite detected	Type	N/A	ISO 17025	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-
Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-
Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-
Speciated PAHs					
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	7.4
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	1.1
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	1.6
Fluorene	mg/kg	0.05	MCERTS	< 0.05	2.6
Phenanthrene	mg/kg	0.05	MCERTS	0.06	18
Anthracene	mg/kg	0.05	MCERTS	< 0.05	3.5
Fluoranthene	mg/kg	0.05	MCERTS	0.08	16
Pyrene	mg/kg	0.05	MCERTS	0.08	16
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	7.3
Chrysene	mg/kg	0.05	MCERTS	< 0.05	6.9
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	7.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	8.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	4.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	4.9
Total PAH					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	110

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277958	277959
Sample Reference				6F2 pre-crush 3	arch stock
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				26/07/2024	02/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.5	30
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	300
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	630
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.9
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	38
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	400
Petroleum Hydrocarbons					
TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0	2.9
TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	9.3
TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0	59
TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	< 10	71
TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0	5.9
TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	< 2.0	22
TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	99
TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	< 10	140
TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	< 10	260
VOCs					
Chloromethane	µg/kg	5	ISO 17025	-	-
Chloroethane	µg/kg	5	NONE	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-
Chloroform	µg/kg	5	ISO 17025	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				277958	277959
Sample Reference				6F2 pre-crush 3	arch stock
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				26/07/2024	02/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Trichloroethene	µg/kg	5	ISO 17025	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-
Bromoform	µg/kg	5	NONE	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-
Bromobenzene	µg/kg	5	NONE	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
Butylbenzene	µg/kg	5	NONE	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-

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

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Analytical Report Number: 24-034565
Project / Site name: Victoria North
Your Order No: 11181

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 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
277954	6F2 crush 6		164	Loose Fibrous Debris	**Amosite**	0.002	**0.002**
277955	6F2 crush 7		142	Loose Fibres	**Chrysotile**	0.004	**0.004**

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: 24-034565
Project / Site name: Victoria North

Your Order No: 11181

Lab Sample Number				277960
Sample Reference				NT04 drain
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				02/08/2024
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
General Inorganics				
Chloride	mg/l	0.15	ISO 17025	26
Fluoride	mg/l	0.05	ISO 17025	0.28
Ammoniacal Nitrogen as NH_3	µg/l	15	ISO 17025	60
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	5.64
Bicarbonate as HCO_3	mgHCO3/l	10	NONE	100
Carbonate as $CaCO_3$	mgCaCO3/l	10	NONE	83
Heavy Metals / Metalloids				
Calcium (dissolved)	mg/l	0.012	ISO 17025	96
Magnesium (dissolved)	mg/l	0.005	ISO 17025	0.081

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

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Analytical Report Number : 24-034565
Project / Site name: Victoria North

* 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 *
277948	ash fill 5	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
277949	ash fill 6	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
277950	ash fill 7	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
277951	ash fill 8	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
277952	6F2 crush 4	None Supplied	None Supplied	Brown loam and gravel with concrete and stones
277953	6F2 crush 5	None Supplied	None Supplied	Brown loam and gravel with concrete and stones
277954	6F2 crush 6	None Supplied	None Supplied	Brown loam and gravel with concrete and stones
277955	6F2 crush 7	None Supplied	None Supplied	Brown loam and gravel with concrete and stones
277956	6F2 pre-crush 1	None Supplied	None Supplied	Light grey rubble with concrete and stones [+b]
277957	6F2 pre-crush 2	None Supplied	None Supplied	Light grey rubble with concrete and stones [+b]
277958	6F2 pre-crush 3	None Supplied	None Supplied	Light grey rubble with concrete and stones [+b]
277959	arch stock	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

Analytical Report Number : 24-034565
Project / Site name: Victoria North

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis; OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Moisture Content	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
Dissolved Organic Carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Bicarbonate as HCO3 in water	Determination of Bicarbonate by discrete analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Carbonate in water	Determination of Carbonate using 0.1M HCl by discrete analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE

Analytical Report Number : 24-034565
Project / Site name: Victoria North

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
Chloride in water	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW,PW, GW,FSE,LL	L082B	W	ISO 17025
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	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	L039B	W	ISO 17025
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW PW, GW	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*b - Unaccredited sample matrix.

Sample Deviation Report

Analytical Report Number : 24-034565
Project / Site name: Victoria North

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
ash fill 7	N/A	S	277950	b	BTEX and/or Volatile organic compounds in soil	L073B	b
ash fill 7	N/A	S	277950	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
ash fill 7	N/A	S	277950	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 crush 4	N/A	S	277952	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 crush 4	N/A	S	277952	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 crush 4	N/A	S	277952	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 crush 5	N/A	S	277953	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 crush 5	N/A	S	277953	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 crush 5	N/A	S	277953	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 crush 6	N/A	S	277954	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 crush 6	N/A	S	277954	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 crush 6	N/A	S	277954	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 pre-crush 1	N/A	S	277956	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 pre-crush 1	N/A	S	277956	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 pre-crush 1	N/A	S	277956	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 pre-crush 2	N/A	S	277957	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 pre-crush 2	N/A	S	277957	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 pre-crush 2	N/A	S	277957	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
6F2 pre-crush 3	N/A	S	277958	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 pre-crush 3	N/A	S	277958	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 pre-crush 3	N/A	S	277958	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
NT04 drain	N/A	W	277960	c	Ammonia as NH3 in water	L082B	c
ash fill 6	N/A	S	277949	b	BTEX and/or Volatile organic compounds in soil	L073B	b
ash fill 6	N/A	S	277949	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
ash fill 6	N/A	S	277949	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
ash fill 8	N/A	S	277951	b	BTEX and/or Volatile organic compounds in soil	L073B	b
ash fill 8	N/A	S	277951	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
ash fill 8	N/A	S	277951	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b

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Analytical Report Number : 24-038721

Project / Site name:	Victoria North	**Samples received on:**	27/08/2024
Your job number:	101221	**Samples instructed on/ Analysis started on:**	27/08/2024
Your order number:	11181	**Analysis completed by:**	04/09/2024
Report Issue Number:	1	**Report issued on:**	04/09/2024
Samples Analysed:	13 soil samples		

[redacted]

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

Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299048	299049	299050	299051	299052
Sample Reference				ash fill 9	ash fill 10	ash fill 11	6F2 Crush 8	6F2 Crush 9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	33.6	< 0.1	-	-
Moisture Content	%	0.01	NONE	8.2	9.2	11	-	-
Total mass of sample received	kg	0.1	NONE	0.8	0.9	0.8	-	-
Whole Sample Crushed	N/A	N/A	NONE	-	-	-	-	Crushed
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	SCA	SCA
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	2.6	2.2	1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.28	0.16	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	3.8	3.3	1.9	-	-
Fluorene	mg/kg	0.05	MCERTS	3.3	2.6	1.9	-	-
Phenanthrene	mg/kg	0.05	MCERTS	22	16	12	-	-
Anthracene	mg/kg	0.05	MCERTS	7	5.1	3.9	-	-
Fluoranthene	mg/kg	0.05	MCERTS	29	20	19	-	-
Pyrene	mg/kg	0.05	MCERTS	27	19	19	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	14	9.5	9.4	-	-
Chrysene	mg/kg	0.05	MCERTS	13	9.1	8.6	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	16	11	10	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	5.1	4.2	3.5	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	13	9.4	9.2	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	6.7	4.9	5.4	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.4	1.2	1.2	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	7.5	5.7	5.6	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	170	123	112	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	16	21	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	1.6	2.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.2	1.1	1.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	41	26	35	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	160	150	150	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	450	420	390	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	0.5	0.5	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36	26	33	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	430	350	420	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299048	299049	299050	299051	299052
Sample Reference				ash fill 9	ash fill 10	ash fill 11	6F2 Crush 8	6F2 Crush 9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	2.6	< 2.0	4.2	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	21	15	17	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	180	230	130	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	200	250	150	-	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	2.5	< 1.0	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	12	7.7	6.4	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	72	55	47	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	270	290	170	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	350	360	220	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
Chloroform	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Carbontetrachloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	30	44	48	-	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299048	299049	299050	299051	299052
Sample Reference				ash fill 9	ash fill 10	ash fill 11	6F2 Crush 8	6F2 Crush 9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Bromoform	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	-	-

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

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299053	299054	299055	299056	299057
Sample Reference				6F2 Crush 10	6F2 Crush 11	6F2 Crush 12	6F2 Crush 13	6F2 Crush 14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	-	91.9	99	-	-
Moisture Content	%	0.01	NONE	-	1.7	1.4	-	-
Total mass of sample received	kg	0.1	NONE	-	1.3	1.3	-	-
Whole Sample Crushed	N/A	N/A	NONE	Crushed	Crushed	Crushed	Crushed	Crushed
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SCA	SCA	SCA	SCA	SCA
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	0.07	0.19	-	-
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	0.26	-	-
Pyrene	mg/kg	0.05	MCERTS	-	0.09	0.28	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	< 0.05	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	< 0.05	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	< 0.80	< 0.80	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	4.4	11	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.1	1.3	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.5	< 0.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	10	11	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	9.5	8.7	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	9.9	5.9	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	7	6.4	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	1.2	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	28	40	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299053	299054	299055	299056	299057
Sample Reference				6F2 Crush 10	6F2 Crush 11	6F2 Crush 12	6F2 Crush 13	6F2 Crush 14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	-	< 10	< 10	-	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	-	< 10	< 10	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299053	299054	299055	299056	299057
Sample Reference				6F2 Crush 10	6F2 Crush 11	6F2 Crush 12	6F2 Crush 13	6F2 Crush 14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

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

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299058	299059	299060
Sample Reference				6F2 Crush 15	6F2 Crush 16	6F2 Crush 17
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Stone Content	%	0.1	NONE	-	-	-
Moisture Content	%	0.01	NONE	-	-	-
Total mass of sample received	kg	0.1	NONE	-	-	-
Whole Sample Crushed	N/A	N/A	NONE	Crushed	Crushed	Crushed
Asbestos						
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SCA	SCA	SCA
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299058	299059	299060
Sample Reference				6F2 Crush 15	6F2 Crush 16	6F2 Crush 17
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Petroleum Hydrocarbons						
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-
VOCs						
Chloromethane	µg/kg	5	MCERTS	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-

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Analytical Report Number: 24-038721
Project / Site name: Victoria North
Your Order No: 11181

Lab Sample Number				299058	299059	299060
Sample Reference				6F2 Crush 15	6F2 Crush 16	6F2 Crush 17
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				23/08/2024	23/08/2024	23/08/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Ethylbenzene	µg/kg	5	MCERTS	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-

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

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Analytical Report Number : 24-038721
Project / Site name: Victoria North

* 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 *
299048	ash fill 9	None Supplied	None Supplied	Brown sand with gravel
299049	ash fill 10	None Supplied	None Supplied	Brown loam and sand with gravel and stones
299050	ash fill 11	None Supplied	None Supplied	Brown sand with gravel
299054	6F2 Crush 11	None Supplied	None Supplied	Non Soil. [*b]
299055	6F2 Crush 12	None Supplied	None Supplied	Non Soil. [*b]

Analytical Report Number : 24-038721
Project / Site name: Victoria North

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis; OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*b - Unaccredited sample matrix.

Sample Deviation Report

Analytical Report Number : 24-038721
Project / Site name: Victoria North

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
6F2 Crush 11	N/A	S	299054	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 Crush 11	N/A	S	299054	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 Crush 11	N/A	S	299054	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	b
6F2 Crush 12	N/A	S	299055	b	BTEX and/or Volatile organic compounds in soil	L073B	b
6F2 Crush 12	N/A	S	299055	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
6F2 Crush 12	N/A	S	299055	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	b

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

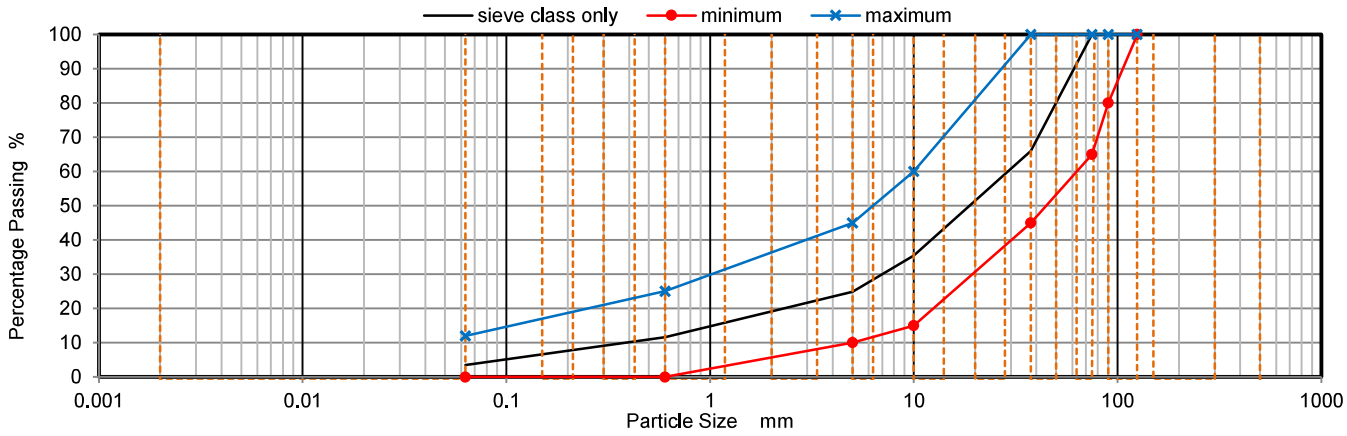
4041

Client:	Provectus Group	Client Reference:	101221
Client Address:	200 Brook Drive, Green Park, Reading, RG2 6UB	Job Number:	24-039018-1
		Date Sampled:	28/08/2024
		Date Received:	29/08/2024
Contact:	David Knapp	Date Tested:	12/09/2024
Site Address:	Victoria North	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	300344	Depth Top [m]:	Not Given
Hole No.:	6F2 280824 A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown sandy GRAVEL with crushed concrete		
Sample Preparation:	Sample was quartered, oven dried at 108.7 °C and broken down by hand.		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	% Passing	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	PASS
90	100	80	-	100	PASS
75	100	65	-	100	PASS
63	92				
50	75				
37.5	66	45	-	100	PASS
28	59				
20	53				
14	44				
10	35	15	-	60	PASS
6.3	27				
5	25	10	-	45	PASS
3.35	21				
2	17				
1.18	14				
0.6	12	0	-	25	PASS
0.425	10				
0.3	9				
0.212	7				
0.15	5				
0.063	4	0	-	12	PASS

Uniformity Coefficient [Cu]		72
D60	mm	28.7
D10	mm	0.401

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Earthworks

Specification for Highway Works, Volume 1, Series 600, TABLE 6/2

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: Katarzyna Banys

Katarzyna Banys
Reporting Specialist

for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Date Reported: 23/09/2024

GF 533.3

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

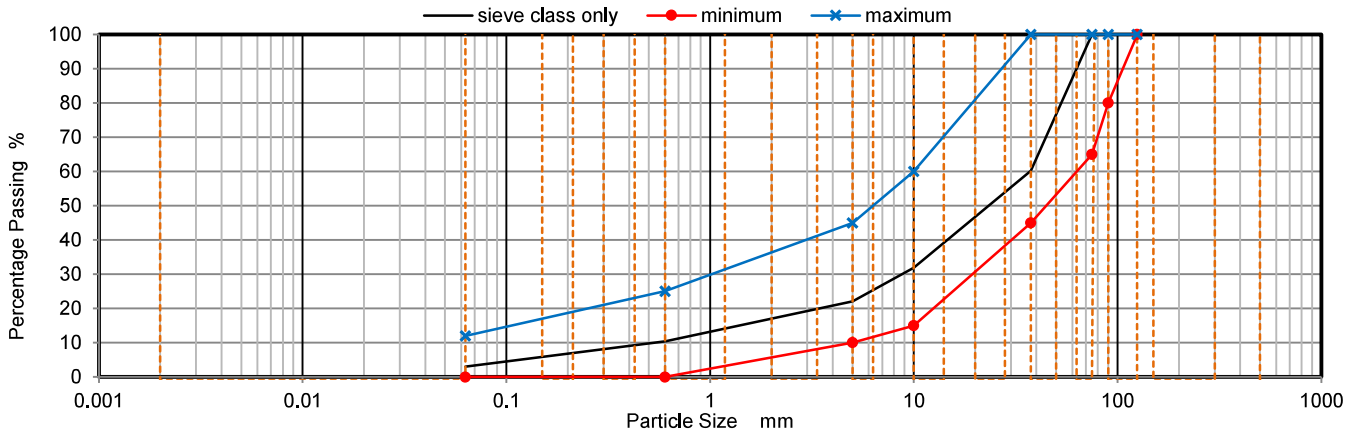
4041

Client:	Provectus Group	Client Reference:	101221
Client Address:	200 Brook Drive, Green Park, Reading, RG2 6UB	Job Number:	24-039018-1
		Date Sampled:	28/08/2024
		Date Received:	29/08/2024
Contact:	David Knapp	Date Tested:	12/09/2024
Site Address:	Victoria North	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	300345	Depth Top [m]:	Not Given
Hole No.:	6F2 280824 B	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Dark brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 108.7 °C and broken down by hand.		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	% Passing	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	PASS
90	100	80	-	100	PASS
75	100	65	-	100	PASS
63	97				
50	76				
37.5	60	45	-	100	PASS
28	56				
20	47				
14	40				
10	32	15	-	60	PASS
6.3	25				
5	22	10	-	45	PASS
3.35	19				
2	16				
1.18	13				
0.6	10	0	-	25	PASS
0.425	9				
0.3	7				
0.212	6				
0.15	4				
0.063	3	0	-	12	PASS

Uniformity Coefficient [Cu]		68
D60	mm	37
D10	mm	0.541

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Earthworks

Specification for Highway Works, Volume 1, Series 600, TABLE 6/2

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: Katarzyna Banys

Katarzyna Banys
Reporting Specialist

for and on behalf of i2 Analytical Ltd

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Date Reported: 23/09/2024

GF 533.3

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

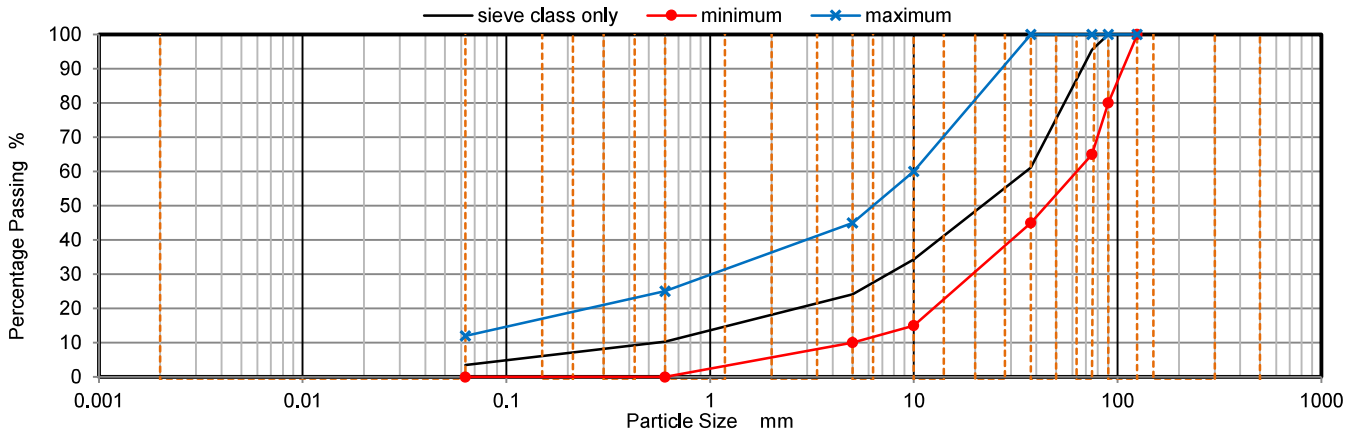
4041

Client:	Provectus Group	Client Reference:	101221
Client Address:	200 Brook Drive, Green Park, Reading, RG2 6UB	Job Number:	24-039018-1
		Date Sampled:	28/08/2024
		Date Received:	29/08/2024
Contact:	David Knapp	Date Tested:	12/09/2024
Site Address:	Victoria North	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	300346	Depth Top [m]:	Not Given
Hole No.:	6F2 280824 C	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Dark brown sandy GRAVEL with fragments of brick		
Sample Preparation:	Sample was quartered, oven dried at 108.7 °C and broken down by hand.		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	% Passing	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	PASS
90	100	80	-	100	PASS
75	96	65	-	100	PASS
63	87				
50	75				
37.5	61	45	-	100	PASS
28	57				
20	49				
14	41				
10	34	15	-	60	PASS
6.3	27				
5	24	10	-	45	PASS
3.35	20				
2	16				
1.18	13				
0.6	10	0	-	25	PASS
0.425	9				
0.3	7				
0.212	6				
0.15	4				
0.063	4	0	-	12	PASS

Uniformity Coefficient [Cu]		62
D60	mm	34.9
D10	mm	0.563

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Earthworks

Specification for Highway Works, Volume 1, Series 600, TABLE 6/2

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: Katarzyna Banys

Katarzyna Banys
Reporting Specialist

for and on behalf of i2 Analytical Ltd

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Date Reported: 23/09/2024

GF 533.3

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

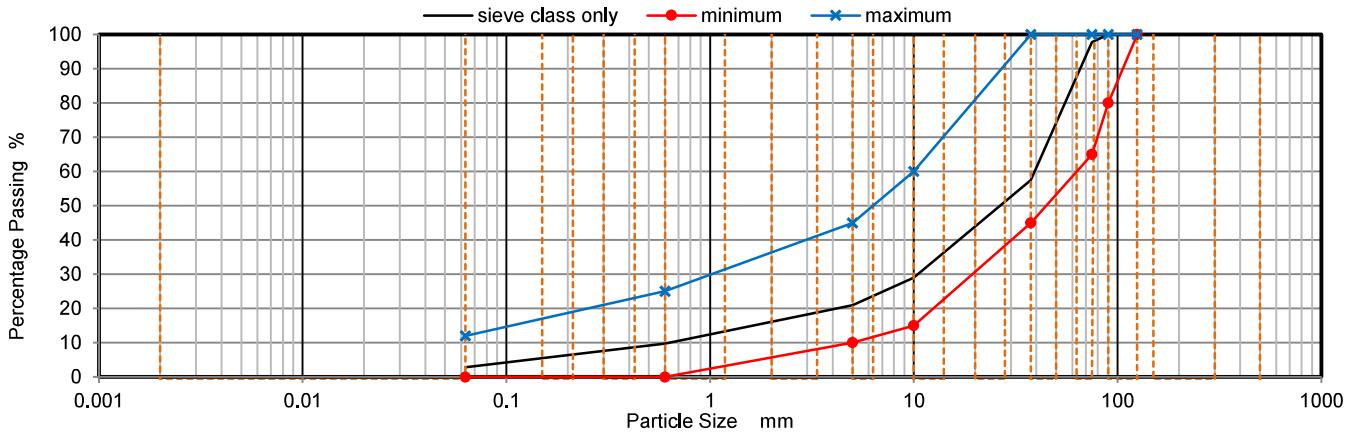
4041

Client:	Provectus Group	Client Reference:	101221
Client Address:	200 Brook Drive, Green Park, Reading, RG2 6UB	Job Number:	24-039018-1
		Date Sampled:	28/08/2024
		Date Received:	29/08/2024
Contact:	David Knapp	Date Tested:	12/09/2024
Site Address:	Victoria North	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	300347	Depth Top [m]:	Not Given
Hole No.:	6F2 280824 D	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown sandy GRAVEL with crushed concrete		
Sample Preparation:	Sample was quartered, oven dried at 108.7 °C and broken down by hand.		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	% Passing	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	PASS
90	100	80	-	100	PASS
75	98	65	-	100	PASS
63	89				
50	72				
37.5	57	45	-	100	PASS
28	51				
20	43				
14	36				
10	29	15	-	60	PASS
6.3	23				
5	21	10	-	45	PASS
3.35	18				
2	14				
1.18	12				
0.6	10	0	-	25	PASS
0.425	9				
0.3	7				
0.212	5				
0.15	4				
0.063	3	0	-	12	PASS

Uniformity Coefficient [Cu]		59
D60	mm	39.5
D10	mm	0.667

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Earthworks

Specification for Highway Works, Volume 1, Series 600, TABLE 6/2

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: Katarzyna Banys

Katarzyna Banys
Reporting Specialist

for and on behalf of i2 Analytical Ltd

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Date Reported: 23/09/2024

GF 533.3

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

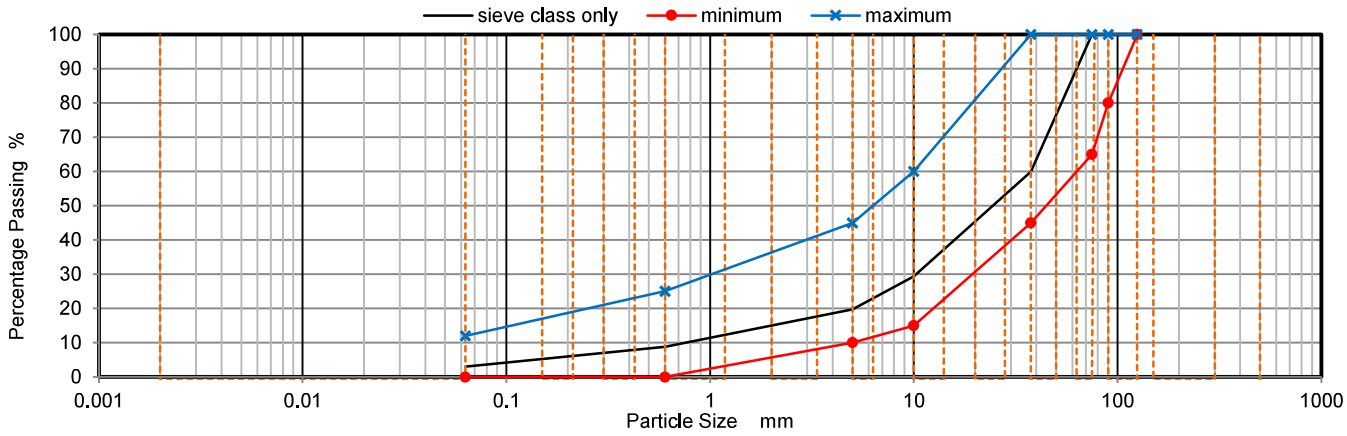
4041

Client:	Provectus Group	Client Reference:	101221
Client Address:	200 Brook Drive, Green Park, Reading, RG2 6UB	Job Number:	24-039018-1
		Date Sampled:	28/08/2024
		Date Received:	29/08/2024
Contact:	David Knapp	Date Tested:	12/09/2024
Site Address:	Victoria North	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	300348	Depth Top [m]:	Not Given
Hole No.:	6F2 280824 E	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown sandy GRAVEL with crushed concrete		
Sample Preparation:	Sample was quartered, oven dried at 108.7 °C and broken down by hand.		



Sieving		Material Type 6F2 Selected granular material			
Particle Size mm	% Passing	Material Specification			Pass or Fail
500	100				
300	100				
150	100				
125	100	100	-	100	PASS
90	100	80	-	100	PASS
75	100	65	-	100	PASS
63	89				
50	68				
37.5	60	45	-	100	PASS
28	54				
20	45				
14	36				
10	29	15	-	60	PASS
6.3	22				
5	20	10	-	45	PASS
3.35	16				
2	13				
1.18	11				
0.6	9	0	-	25	PASS
0.425	8				
0.3	7				
0.212	5				
0.15	4				
0.063	3	0	-	12	PASS

Uniformity Coefficient [Cu]		41
D60	mm	37.7
D10	mm	0.92

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Earthworks

Specification for Highway Works, Volume 1, Series 600, TABLE 6/2

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: Katarzyna Banys

Katarzyna Banys
Reporting Specialist

for and on behalf of i2 Analytical Ltd

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Date Reported: 23/09/2024

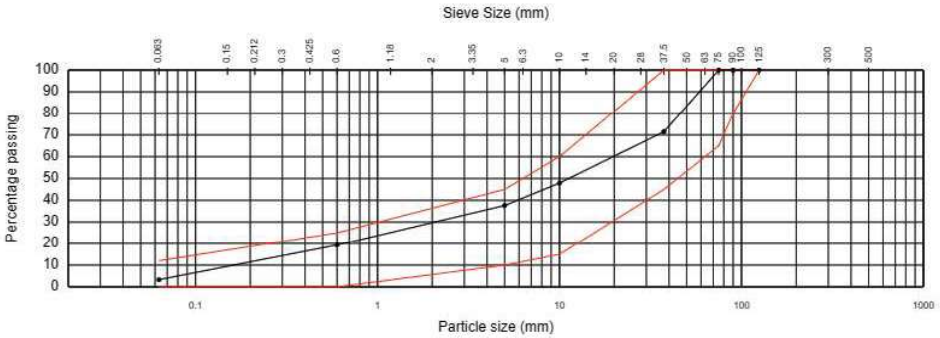
GF 533.3

TEST REPORT: DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in accordance with BS 1377 - 2 : 1990, Method 9.2 Washing & Dry Sieving and BS 1377 - 2 : 1990, Method 3.2

REPORT NUMBER:	C1087613 / 303457.7.1.1		
SAMPLE NUMBER:	479256	CLIENT:	Provectus Remediation Ltd
CLIENT REF:	DN6381/10	ADDRESS:	Regent House , Bath Avenue , Wolverhampton , WV1 4EG
DATE SAMPLED:	17/07/2024	SITE:	Central Manchester
SAMPLED BY:	Ellis Wilson	SOURCE / SUPPLIER:	Ex site, Ex site
DATE RECEIVED:	18/07/2024	MATERIAL DESCRIPTION:	6F2
DATE COMPLETED:	30/08/2024	PROPOSED CLASSIFICATION:	Class 6F2
TESTED BY:	RP, RH, CG	LOCATION:	Clean Crush
TYPE OF SAMPLE:	Disturbed	PREPARATION METHOD:	BS 1377:Part 1:2016 clause 8.3 & 8.4.5
VARIATIONS:	No variations	SAMPLING PLAN:	Not known
METHOD OF SAMPLING:	Sampled by client	LOCATION AND ORIENTATION WITHIN SAMPLE:	N/A
ENVIRONMENTAL CONDITIONS:			

RESULT **Test Location: Harrietsham Lab**



Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse		
0.020	0.063	0.20	0.63	2.0	6.3	20	63	200
SILT/CLAY	SAND			GRAVEL			COBBLE	BOULDERS

Percentage BOULDERS: 0%
Percentage COBBLES: 19%
Percentage GRAVEL: 51%
Percentage SAND: 26%
Percentage SILT/CLAY: 3%

Applied Specification: Class 6F2 - Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 6F2
Specification stated as requested, no indication of conformity applied

SIEVE ANALYSIS

Particle Diameter mm	Passing %	Specification Limits
500	100	
300	100	
125	100	100 - 100
100	100	
90	100	80 - 100
75	100	65 - 100
63	81	
50	76	
37.5	72	45 - 100
28	65	
20	57	
14	52	
10	48	15 - 60
6.3	39	
5	38	10 - 45
3.35	35	
2	30	
1.18	24	
0.6	19	0 - 25
0.425	16	
0.3	12	
0.212	9	
0.15	6	
0.063	3	0 - 12

Remarks:
Test results reported relate only to the items tested.
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Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.The laboratory does not apply a conformity statement to test reports as standard, unless specifically requested by the customer.

For and on behalf of CTS
Dan Gay - Laboratory Manager

[redacted]

Approved Signatory
Report date 30-Aug-24

4161

Report Format: PSDsoil/TP02/Rep Issue 1 Rev 1 09/23

Northdown House, Ashford Road
Harrietsham, Nr Maidstone
Kent ME17 1QW

0343 227 8545
enquiries@constructiontesting.co.uk
www.constructiontesting.co.uk

END OF REPORT

Construction Testing Solutions Ltd.
Registered in England No. 05998333

Appendix H

Re-use testing

RB02 re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/01137/1 RB02A-001-G 31-Jan-24 Soil - ES	24/01137/2 RB02A-002-C 31-Jan-24 Soil - ES	24/01137/3 RB02A-003-C 31-Jan-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	23	35.8	16.8	43.1	67	67	13	17
Zinc	mg/kg	2690	5	A-T-024s	23	182.8	116.0	233.0	510	258	33	44
Anthracene	mg/kg	31	0.02	A-T-019s	23	0.2	0.2	0.3	0.76	0.25	<0.02	<0.02
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	23	0.4	0.4	0.6	1.59	0.9	<0.04	<0.04
Fluoranthene	mg/kg	120	0.08	A-T-019s	23	1.0	1.4	1.6	5.48	1.81	<0.08	<0.08
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	23	171.1	145.7	234.1	583	243	<10	<10
PFOS (s)	µg/kg	2	1	Subcon Veritas	23	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	23	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00

RB02 re-use testing

24/01137/4 RB02B-001-G 31-Jan-24 Soil - ES	24/01137/5 RB02B-002-G 31-Jan-24 Soil - ES	24/01137/6 RB02B-003-G 31-Jan-24 Soil - ES	24/01137/7 RB02C-001-G 31-Jan-24 Soil - ES	24/01137/8 RB02C-002-G 31-Jan-24 Soil - ES	24/01137/9 RB02C-003-G 31-Jan-24 Soil - ES	24/01137/10 RB02D-001-G 31-Jan-24 Soil - ES	24/01137/11 RB02D-002-G 31-Jan-24 Soil - ES	24/01137/12 RB02D-003-G 31-Jan-24 Soil - ES	24/01137/13 RB02E-001-G 02-Feb-24 Soil - ES	24/01137/14 RB02E-002-G 02-Feb-24 Soil - ES	24/01137/15 RB02E-003-C 02-Feb-24 Soil - ES	24/01137/16 RB02F-001-G 02-Feb-24 Soil - ES	24/01137/17 RB02F-002-C 02-Feb-24 Soil - ES
37	38	47	42	63	54	26	44	36	39	27	10	63	21
261	157	176	244	259	133	510	150	119	284	304	46	130	95
0.12	0.08	0.09	<0.02	<0.02	0.04	<0.02	<0.02	0.03	0.27	0.76	0.07	<0.02	<0.02
0.34	0.29	0.33	<0.04	<0.04	0.07	<0.04	0.05	0.07	0.66	1.59	0.14	<0.04	<0.04
0.92	0.53	0.74	<0.08	0.14	0.2	<0.08	0.11	0.13	1.76	5.48	0.36	<0.08	<0.08
229	100	300	72	100	103	49	135	149	303	583	20	49	55
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

24/01137/18	24/01137/19	24/01137/20	24/01137/21	24/01137/22	24/01137/23
RB02F-003-C	RB02G-001-G	RB02G-002-C	RB02G-003-C	RB02H-001-G	RB02H-002-G
02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
30	46	16	11	46	31
156	289	47	31	281	198
<0.02	0.08	<0.02	<0.02	0.22	0.06
<0.04	0.21	<0.04	<0.04	0.59	0.18
<0.08	0.55	<0.08	<0.08	1.3	0.43
27	260	14	<10	271	359
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

RB03 re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/01484/1 RB03A-001-G 05-Feb-24 Soil - ES	24/01484/2 RB03A-002-G 05-Feb-24 Soil - ES	24/01484/3 RB03A-003-G 05-Feb-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	23	33.4	10.2	37.8	50	37	38	50
Zinc	mg/kg	2690	5	A-T-024s	23	222.9	150.8	288.1	642	224	194	318
Anthracene	mg/kg	31	0.02	A-T-019s	23	0.5	0.6	0.7	1.98	1.98	0.08	0.04
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	23	1.1	1.1	1.6	3.26	2.65	0.33	0.07
Fluoranthene	mg/kg	120	0.08	A-T-019s	23	2.4	2.8	3.6	9.09	9.09	0.44	0.11
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	23	286.4	184.2	366.1	825	285	61	51
PFOS (s)	µg/kg	2	1	Subcon Veritas	23	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	23	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00

RB03 re-use testing

24/01484/4 RB03B-001-G 05-Feb-24 Soil - ES	24/01484/5 RB03B-002-G 05-Feb-24 Soil - ES	24/01484/6 RB03B-003-C 05-Feb-24 Soil - ES	24/01484/7 RB03C-001-G 05-Feb-24 Soil - ES	24/01484/8 RB03C-002-G 05-Feb-24 Soil - ES	24/01484/9 RB03C-003-G 05-Feb-24 Soil - ES	24/01484/10 RB03D-001-G 05-Feb-24 Soil - ES	24/01484/11 RB03D-002-G 05-Feb-24 Soil - ES	24/01484/12 RB03D-003-G 05-Feb-24 Soil - ES	24/01484/13 RB03E-001-G 06-Feb-24 Soil - ES	24/01484/14 RB03E-002-G 06-Feb-24 Soil - ES	24/01484/15 RB03E-003-G 06-Feb-24 Soil - ES	24/01484/17 RB03F-002-C 06-Feb-24 Soil - ES	24/01484/18 RB03F-003-G 06-Feb-24 Soil - ES
44	35	13	45	40	36	28	35	38	32	33	40	31	35
201	235	34	642	260	422	285	277	310	169	89	392	75	229
0.28	0.18	0.12	1.35	1.37	0.53	0.17	0.21	0.22	0.31	0.21	0.1	<0.02	0.28
0.54	0.63	0.52	2.82	3.08	1.66	0.16	0.35	0.1	1.24	0.85	0.36	<0.04	1.17
1.17	1.29	0.75	6.95	7.09	2.73	0.28	0.45	0.26	2.13	1.38	0.51	<0.08	1.96
277	178	23	339	367	446	201	215	216	378	256	278	<10	280
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

24/01484/19	24/01484/20	24/01484/21	24/01484/22	24/01484/23	24/01484/24
RB03G-001-G	RB03G-002-C	RB03G-003-C	RB03H-001-G	RB03H-002-G	RB03H-003-G
06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
48	25	26	33	12	15
371	51	48	227	33	40
0.09	<0.02	<0.02	0.75	<0.02	<0.02
0.27	<0.04	<0.04	3.26	<0.04	<0.04
0.35	<0.08	<0.08	5.94	<0.08	<0.08
480	<10	<10	825	<10	<10
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

RB04 re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/01484/25 RB04A-001-G 07-Feb-24 Soil - ES	24/01484/26 RB04B-001-G 07-Feb-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	4	45.0	10.0	60.9	56	48	56
Zinc	mg/kg	2690	5	A-T-024s	4	308.3	164.9	570.6	476	423	476
Anthracene	mg/kg	31	0.02	A-T-019s	4	1.0	1.5	3.4	3.24	0.49	3.24
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	4	2.7	4.0	9.1	8.68	1.47	8.68
Fluoranthene	mg/kg	120	0.08	A-T-019s	4	6.1	9.6	21.3	20.4	2.36	20.4
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	4	293.8	195.0	604.1	585	188	222
PFOS (s)	µg/kg	2	1	Subcon Veritas	4	<1.0	N/A	N/A	<1.0	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	4	<1.0	N/A	N/A	<1.0	<1.00	<1.00

24/01484/28	24/01484/29
RB04C-002-C	RB04D-001-G
07-Feb-24	07-Feb-24
Soil - ES	Soil - ES
32	44
154	180
0.2	0.08
0.42	0.2
1.16	0.38
180	585
<1.00	<1.00
<1.00	<1.00

RB05a re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/01484/30 RB05aA-001-G 07-Feb-24 Soil - ES	24/01484/31 RB05aA-002-C 07-Feb-24 Soil - ES	24/01484/32 RB05aB-001-C 07-Feb-24 Soil - ES	24/01484/33 RB05aB-002-G 07-Feb-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	15	29.7	17.0	39.1	61	26	61	24	60
Zinc	mg/kg	2690	5	A-T-024s	15	164.5	136.5	240.0	409	43	409	126	206
Anthracene	mg/kg	31	0.02	A-T-019s	15	0.6	0.4	0.9	1.49	0.65	0.68	1.49	0.49
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	15	2.5	2.2	3.7	7.17	3.27	1.67	7.17	1.5
Fluoranthene	mg/kg	120	0.08	A-T-019s	15	3.7	3.9	5.8	12.4	5.66	2.62	12.4	2.49
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	15	700.9	638.4	1054.4	1750	1640	159	1750	504
PFOS (s)	µg/kg	2	1	Subcon Veritas	15	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	15	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00	<1.00
>C8-C10	mg/kg	153	1	A-T-007s						<1		<1	
>C10-C12	mg/kg	76	1	A-T-007s						2		5	
>C12-C16	mg/kg	208	2	A-T-007s						16		27	
>C16-C21	mg/kg	323	2	A-T-007s						112		139	
>C21-C40	mg/kg	2453	5	A-T-007s						1510		1580	

RB05a re-use testing

24/01767/2 RB05aD-001-G 12-Feb-24 Solid	24/01767/3 RB05aD-002-G 12-Feb-24 Soil - ES	24/01767/4 RB05aD-003-C 12-Feb-24 Soil - ES	24/01767/5 RB05aE-001-G 12-Feb-24 Soil - ES	24/01767/6 RB05aE-002-G 12-Feb-24 Soil - ES	24/01767/7 RB05aF-001-G 12-Feb-24 Soil - ES	24/01767/8 RB05aF-002-G 12-Feb-24 Soil - ES	24/06875/1 RB05a-S-001 11-Jul-24 Soil - ES	24/06875/2 RB05a-S-002 11-Jul-24 Soil - ES	24/06875/3 RB05a-S-003 11-Jul-24 Soil - ES	24/06875/4 RB05a-S-004 11-Jul-24 Soil - ES
6	34	33	31	26	54	10	24	22	25	10
50	382	88	187	375	292	110	46	52	53	48
<0.02	0.4	<0.02	0.31	<0.02	0.46	<0.02	<0.02	<0.02	<0.02	<0.02
<0.04	1.74	<0.04	0.97	<0.04	1.01	<0.04	<0.04	<0.04	<0.04	<0.04
<0.08	3.23	<0.08	1.58	<0.08	1.55	<0.08	<0.08	<0.08	<0.08	0.09
<10	803	<10	795	<10	610	<10	25	22	<10	<10
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

RB05c re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of Detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/07363/8 RB05-Ash-001 25-Jun-24 Soil - ES	24/07363/9 RB05-Ash-002 25-Jun-24 Soil - ES	24/07363/10 RB05-Ash-003 25-Jun-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	0	N/A	N/A	N/A	0			
Zinc	mg/kg	2690	5	A-T-024s	3	296.0	55.7	434.3	349	349	238	301
Anthracene	mg/kg	31	0.02	A-T-019s	3	0.7	0.5	1.9	1.23	0.55	0.27	1.23
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	3	1.4	1.2	4.5	2.79	0.91	0.47	2.79
Fluoranthene	mg/kg	120	0.08	A-T-019s	3	3.6	3.2	11.5	7.22	2.32	1.31	7.22
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	3	338.7	131.4	665.0	482	224	310	482
PFOS (s)	µg/kg	2	1	Subcon Veritas	3	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	3	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00

Carriage shed re-use testing

Lab Sample ID										24/01978/1	24/01978/2	24/01978/3
Client Sample ID										CSA-001-C	CSB-001-G	CSC-001-C
Date Sampled										20-Feb-24	20-Feb-24	20-Feb-24
Sample Type	**Units**	**Verification target**	**Limit of Detection**	**Method**	**Number of samples**	**Mean**	**Standard deviation**	**95% upper confidence limit**	**Maximum**	Soil - ES	Soil - ES	Soil - ES
Nickel	mg/kg	56	1	A-T-024s	19	28.7	5.4	31.3	34	33	34	31
Zinc	mg/kg	2690	5	A-T-024s	19	208.4	91.5	252.5	324	324	302	214
Anthracene	mg/kg	31	0.02	A-T-019s	12	1.3	0.6	1.7	2.14	1.81	1.08	2.14
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	12	2.8	1.2	3.6	4.01	3.19	2.81	4.01
Fluoranthene	mg/kg	120	0.08	A-T-019s	12	8.2	3.7	10.6	13.6	9.22	7.61	13.6
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	12	734.3	449.2	1019.7	1470	488	1100	1130
PFOS (s)	µg/kg	2	1	Subcon Veritas	11	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	11	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
>C8-C10	mg/kg	153	1	A-T-007s							2	2
>C10-C12	mg/kg	76	1	A-T-007s							4	4
>C12-C16	mg/kg	208	2	A-T-007s							29	29
>C16-C21	mg/kg	323	2	A-T-007s							165	126
>C21-C40	mg/kg	2453	5	A-T-007s							903	966

Carriage shed re-use testing

24/01978/4	24/01978/5	24/01978/6	24/01978/7	24/01978/8	24/02234/3	24/03119/1	24/03119/2	24/03119/3	24/06699/8	24/06699/9	24/06699/10	24/06699/11	24/06699/12
CSD-001-G	CSE-001-G	CSF-001-G	CSG-001-G	CSH-001-G	CSI-001-G	CSJ-001-C	CSK-001-C	CSL-001-C	CSA-001-C-ZN	CSB-001-G-ZN	CSC-001-C-ZN	CSD-001-G-ZN	CSE-001-G-ZN
20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	26-Feb-24	21-Mar-24	21-Mar-24	21-Mar-24	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
32	31	21	34	24		25	17	24	33	34	31	32	31
262	247	130	272	132		113	29	52	324	302	214	262	247
1.12	0.98	2.03	1.01	1.66	1.88	0.05	0.74	<0.02					
3.63	3.2	3.68	2.94	3.43	3.05	0.13	1.08	<0.04					
8.77	7.63	11.6	7.63	11.1	9.23	0.28	3.63	<0.08					
551	706	1150	727	1470	633	31	91	<10					
<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00	<1.00					
<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00	<1.00					
		1		2									
		4		5									
		36		50									
		180		235									
		921		1170									

24/06699/13	24/06699/14	24/06699/15
CSF-001-G-ZN	CSG-001-G-ZN	CSH-001-G-ZN
03-Jul-24	03-Jul-24	03-Jul-24
Soil - ES	Soil - ES	Soil - ES
21	34	24
130	272	132

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of Detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/01137/24 RB02SPA-001-G. 02-Feb-24 Soil - ES	24/01137/25 RB02SPA-002-G 02-Feb-24 Soil - ES	24/01767/9 RB02+RB03 EMBANKMENT-001-G 13-Feb-24 Soil - ES
Nickel	mg/kg	56	1	A-T-024s	6	40.5	3.3	43.9	47	40	39	40
Zinc	mg/kg	2690	5	A-T-024s	6	769.8	343.2	1130.0	1230	321	525	1230
Anthracene	mg/kg	31	0.02	A-T-019s	6	0.4	0.2	0.6	0.65	0.53	0.65	0.43
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	6	1.1	0.4	1.5	1.6	1.6	1.26	1.45
Fluoranthene	mg/kg	120	0.08	A-T-019s	6	2.6	1.6	4.4	5.23	5.23	3.94	2.54
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	6	244.8	152.1	404.5	464	404	464	188
PFOS (s)	µg/kg	2	1	Subcon Veritas	6	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	6	<1.0	N/A	N/A	<1.0	<1.00	<1.00	<1.00

24/01767/10	24/01767/11	24/01767/12
RB02+RB03 EMBANKMENT-002-G	RB02+RB03 EMBANKMENT-003-G	RB02+RB03 EMBANKMENT-004-G
13-Feb-24	13-Feb-24	13-Feb-24
Soil - ES	Soil - ES	Soil - ES
47	39	38
1060	864	619
0.24	0.16	0.2
1.03	0.55	0.96
1.73	0.97	1.39
82	164	167
<1.00	<1.00	<1.00
<1.00	<1.00	<1.00

Masonry re-use testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of Detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/03483/1 GWBricks 22-Mar-24 Solid	24/03483/2 CSBricks 22-Mar-24 Solid
Nickel	mg/kg	56	1	A-T-024s	5	13	7.4	22.2	20.0	6	17
Zinc	mg/kg	2690	5	A-T-024s	5	111.8	125.4	267.5	306.0	16	56
Anthracene	mg/kg	31	0.02	A-T-019s	5	1.435	1.2	2.9	2.3	<0.20	<0.20
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	5	1.71	1.9	4.1	4.4	0.5	<0.40
Fluoranthene	mg/kg	120	0.08	A-T-019s	5	6.43	4.1	11.5	9.3	<0.80	<0.80
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	5	958	341.0	1381.4	1270.0	<100	<100
PFOS (s)	µg/kg	2	1	Subcon Veritas	5	<1.0	N/A	N/A	<1.0	<1.00	<1.00
PFOA (s)	µg/kg	1	1	Subcon Veritas	5	<1.0	N/A	N/A	<1.0	<1.00	<1.00
>C8-C10	mg/kg	153	153	A-T-007s							
>C10-C12	mg/kg	76	76	A-T-007s							
>C12-C16	mg/kg	208	208	A-T-007s							
>C16-C21	mg/kg	323	323	A-T-007s							
>C21-C40	mg/kg	2453	2453	A-T-007s							

Masonry re-use testing

24/03483/3	24/06875/5	24/06875/6
SPBricks	GWA1-SF2-001	GWA1-SF2-002
22-Mar-24	11-Jul-24	11-Jul-24
Solid	Soil - ES	Soil - ES
4	18	20
13	306	168
<0.20	0.61	2.26
0.41	1.49	4.44
<0.80	3.56	9.3
1010	594	1270
<1.00	<1.00	<1.00
<1.00	<1.00	<1.00
4		<1
27		3
<2		34
3		168
96		1070

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/01137/1

Amendments: Re-issue following query/investigation

Envirolab Job Number: 24/01137
Issue Number: 2 **Date:** 05 March, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 02/02/24
Date Instructions Received: 05/02/24
Date Analysis Completed: 05/03/24

Approved by:

[redacted]

Danielle Brierley
Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/1	24/01137/2	24/01137/3	24/01137/4	24/01137/5	24/01137/6	24/01137/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02A-001-G	RB02A-002-C	RB02A-003-C	RB02B-001-G	RB02B-002-G	RB02B-003-G	RB02C-001-G			
Depth to Top	0.50	1.50	2.50	1.00	2.00	2.80	0.50			
Depth To Bottom										
Date Sampled	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	3	3	4A	4A	4A	4A			
% Stones >10mm$_A$	12.3	<0.1	6.1	12.5	8.4	10.0	10.1	% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	67	13	17	37	38	47	42	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	258	33	44	261	157	176	244	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.25	<0.02	<0.02	0.12	0.08	0.09	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.90	<0.04	<0.04	0.34	0.29	0.33	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.81	<0.08	<0.08	0.92	0.53	0.74	<0.08	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	243	<10	<10	229	100	300	72	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/1	24/01137/2	24/01137/3	24/01137/4	24/01137/5	24/01137/6	24/01137/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02A-001-G	RB02A-002-C	RB02A-003-C	RB02B-001-G	RB02B-002-G	RB02B-003-G	RB02C-001-G			
Depth to Top	0.50	1.50	2.50	1.00	2.00	2.80	0.50			
Depth To Bottom										
Date Sampled	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	3	3	4A	4A	4A	4A			
PFAS (8)										
PFPeA$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/8	24/01137/9	24/01137/10	24/01137/11	24/01137/12	24/01137/13	24/01137/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02C-002-G	RB02C-003-G	RB02D-001-G	RB02D-002-G	RB02D-003-G	RB02E-001-G	RB02E-002-G			
Depth to Top	1.50	2.50	0.50	1.50	2.50	0.50	1.50			
Depth To Bottom										
Date Sampled	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	02-Feb-24	02-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4A	4A	4A	4A	4A	3A			
% Stones >10mm$_A$	4.0	18.1	14.2	5.6	13.7	8.2	10.0	% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	63	54	26	44	36	39	27	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	259	133	510	150	119	284	304	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	<0.02	0.04	<0.02	<0.02	0.03	0.27	0.76	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.07	<0.04	0.05	0.07	0.66	1.59	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.14	0.20	<0.08	0.11	0.13	1.76	5.48	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	100	103	49	135	149	303	583	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/8	24/01137/9	24/01137/10	24/01137/11	24/01137/12	24/01137/13	24/01137/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02C-002-G	RB02C-003-G	RB02D-001-G	RB02D-002-G	RB02D-003-G	RB02E-001-G	RB02E-002-G			
Depth to Top	1.50	2.50	0.50	1.50	2.50	0.50	1.50			
Depth To Bottom										
Date Sampled	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	31-Jan-24	02-Feb-24	02-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4A	4A	4A	4A	4A	3A			
PFAS (8)										
PFPeA$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/15	24/01137/16	24/01137/17	24/01137/18	24/01137/19	24/01137/20	24/01137/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02E-003-C	RB02F-001-G	RB02F-002-C	RB02F-003-C	RB02G-001-G	RB02G-002-C	RB02G-003-C			
Depth to Top	2.70	0.50	1.50	2.50	0.50	1.50	2.50			
Depth To Bottom										
Date Sampled	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	4A	3	3	4A	5	1A			
% Stones >10mm$_A$	0.9	13.6	2.3	1.8	9.9	7.5	4.5	% w/w	0.1	A-T-044
Nickel$_D$$^{M\#}$	10	63	21	30	46	16	11	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	46	130	95	156	289	47	31	mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$	0.07	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$	0.14	<0.04	<0.04	<0.04	0.21	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$	0.36	<0.08	<0.08	<0.08	0.55	<0.08	<0.08	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$	20	49	55	27	260	14	<10	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/15	24/01137/16	24/01137/17	24/01137/18	24/01137/19	24/01137/20	24/01137/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02E-003-C	RB02F-001-G	RB02F-002-C	RB02F-003-C	RB02G-001-G	RB02G-002-C	RB02G-003-C			
Depth to Top	2.70	0.50	1.50	2.50	0.50	1.50	2.50			
Depth To Bottom										
Date Sampled	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	4A	3	3	4A	5	1A			
PFAS (8)										
PFPeA$_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	Appended	Appended	Appended	Appended	Appended	Appended	Appended	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/22	24/01137/23	24/01137/24	24/01137/25				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02H-001-G	RB02H-002-G	RB02SPA-001-G.	RB02SPA-002-G						
Depth to Top	0.50	1.50								
Depth To Bottom										
Date Sampled	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	4A	4A	4A						
% Stones >10mm$_A$	9.0	6.7	10.2	12.0				% w/w	0.1	A-T-044
Nickel$_D$$^{M\#}$	46	31	40	39				mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	281	198	321	525				mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$	0.22	0.06	0.53	0.65				mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$	0.59	0.18	1.60	1.26				mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$	1.30	0.43	5.23	3.94				mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$	271	359	404	464				mg/kg	10	A-T-007s

Envirolab Job Number: 24/01137

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01137/22	24/01137/23	24/01137/24	24/01137/25				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB02H-001-G	RB02H-002-G	RB02SPA-001-G.	RB02SPA-002-G						
Depth to Top	0.50	1.50								
Depth To Bottom										
Date Sampled	02-Feb-24	02-Feb-24	02-Feb-24	02-Feb-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	4A	4A	4A						
PFAS (8)										
PFPeA$_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	Appended	Appended	Appended	Appended				µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25ºC / 11550µS/cm @ 20ºC fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/01137

Date Received: 05/02/2024 (am)

Cool Box Temperatures (°C): 7.2 - 8..4

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/01137/1	24/01137/2	24/01137/3	24/01137/4	24/01137/5	24/01137/6	24/01137/7	24/01137/8	24/01137/9	24/01137/10
Client Sample No										
Client Sample ID/Depth	RB02A-001-G 0.50m	RB02A-002-C 1.50m	RB02A-003-C 2.50m	RB02B-001-G 1.00m	RB02B-002-G 2.00m	RB02B-003-G 2.80m	RB02C-001-G 0.50m	RB02C-002-G 1.50m	RB02C-003-G 2.50m	RB02D-001-G 0.50m
Date Sampled	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24	31/01/24
A-T-007s	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	15/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-019s	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024
A-T-024s	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-044	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024

Lab Sample ID	24/01137/11	24/01137/12	24/01137/13	24/01137/14	24/01137/15	24/01137/16	24/01137/17	24/01137/18	24/01137/19	24/01137/20
Client Sample No										
Client Sample ID/Depth	RB02D-002-G 1.50m	RB02D-003-G 2.50m	RB02E-001-G 0.50m	RB02E-002-G 1.50m	RB02E-003-C 2.70m	RB02F-001-G 0.50m	RB02F-002-C 1.50m	RB02F-003-C 2.50m	RB02G-001-G 0.50m	RB02G-002-C 1.50m
Date Sampled	31/01/24	31/01/24	02/02/24	02/02/24	02/02/24	02/02/24	02/02/24	02/02/24	02/02/24	02/02/24
A-T-007s	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-019s	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024
A-T-024s	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-044	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024

Lab Sample ID	24/01137/21	24/01137/22	24/01137/23	24/01137/24	24/01137/25
Client Sample No					
Client Sample ID/Depth	RB02G-003-C 2.50m	RB02H-001-G 0.50m	RB02H-002-G 1.50m	RB02SPA-001-G.	RB02SPA-002-G
Date Sampled	02/02/24	02/02/24	02/02/24	02/02/24	02/02/24
A-T-007s	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-019s	12/02/2024	12/02/2024	12/02/2024	12/02/2024	12/02/2024
A-T-024s	16/02/2024	16/02/2024	16/02/2024	16/02/2024	16/02/2024
A-T-044	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

VERITAS LABORATORY SERVICES

Report Number: 2024-167

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/1
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-167
Customer Sample Identifier : 24/01137/1
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-168

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/2
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-168
Customer Sample Identifier : 24/01137/2
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-169

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/3
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-169
Customer Sample Identifier : 24/01137/3
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-170

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/4
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-170
Customer Sample Identifier : 24/01137/4
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-171

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/5
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director
Signature : [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-171
Customer Sample Identifier : 24/01137/5
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-172

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 02/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/6
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-172
Customer Sample Identifier : 24/01137/6
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-173

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/7
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-173
Customer Sample Identifier : 24/01137/7
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-174

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/8
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-174
Customer Sample Identifier : 24/01137/8
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-175

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/9
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-175
Customer Sample Identifier : 24/01137/9
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-176

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/10
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-176
Customer Sample Identifier : 24/01137/10
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-177

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/11
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-177
Customer Sample Identifier : 24/01137/11
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-178

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/12
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

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Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-178
Customer Sample Identifier : 24/01137/12
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-179

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/13
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signatur [redacted]

UKAS TESTING

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Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-179
Customer Sample Identifier : 24/01137/13
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-180

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/14
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-180
Customer Sample Identifier : 24/01137/14
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-181

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/15
Sample Condition : Conforming

Comments:
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Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING

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Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-181
Customer Sample Identifier : 24/01137/15
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-182

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/16
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-182
Customer Sample Identifier : 24/01137/16
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-183

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/17
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-183
Customer Sample Identifier : 24/01137/17
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-184

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/18
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-184
Customer Sample Identifier : 24/01137/18
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-185

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/19
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-185
Customer Sample Identifier : 24/01137/19
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-186

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/20
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director
Signature : [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-186
Customer Sample Identifier : 24/01137/20
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-187

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/21
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-187
Customer Sample Identifier : 24/01137/21
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-188

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/22
Sample Condition : Conforming

Comments:
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***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-188
Customer Sample Identifier : 24/01137/22
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-189

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/23
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit **Signature :**
Position : Director

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-189
Customer Sample Identifier : 24/01137/23
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-190

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 13/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/24
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director
Signature : [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-190
Customer Sample Identifier : 24/01137/24
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

TEST REPORT

Report Number: 2024-191

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0753389
Issue : 1
Date of Receipt : 07/02/24
Date of Analysis : 28/02/24
Date of Report : 05/03/24
Sample Type : Soil
Customer Sample Identifier : 24/01137/25
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
***Client requested shorter suite.**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING

26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-191
Customer Sample Identifier : 24/01137/25
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/01484
Issue Number: 1 **Date:** 05 March, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell/TRUtesting
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 12/02/24
Date Instructions Received: 14/02/24
Date Analysis Completed: 05/03/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/1	24/01484/2	24/01484/3	24/01484/4	24/01484/5	24/01484/6	24/01484/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03A-001-G	RB03A-002-G	RB03A-003-G	RB03B-001-G	RB03B-002-G	RB03B-003-C	RB03C-001-G			
Depth to Top	0.50	1.50	2.50	0.50	1.50	2.80	0.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	5A	4AB			
% Stones >10mm$_{A}$	13.0	10.5	9.9	10.8	16.3	<0.1	1.6	% w/w	0.1	A-T-044
Nickel$_{D}^{M\#}$	37	38	50	44	35	13	45	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	224	194	318	201	235	34	642	mg/kg	5	A-T-024s
Anthracene$_{A}^{M\#}$	1.98	0.08	0.04	0.28	0.18	0.12	1.35	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	2.65	0.33	0.07	0.54	0.63	0.52	2.82	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	9.09	0.44	0.11	1.17	1.29	0.75	6.95	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	285	61	51	277	178	23	339	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/1	24/01484/2	24/01484/3	24/01484/4	24/01484/5	24/01484/6	24/01484/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03A-001-G	RB03A-002-G	RB03A-003-G	RB03B-001-G	RB03B-002-G	RB03B-003-C	RB03C-001-G			
Depth to Top	0.50	1.50	2.50	0.50	1.50	2.80	0.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	5A	4AB			
PFAS (49)										
PFBA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484 **Client Project Name: Victoria North Remediation**

Client Project Ref: 331B

Lab Sample ID	24/01484/1	24/01484/2	24/01484/3	24/01484/4	24/01484/5	24/01484/6	24/01484/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03A-001-G	RB03A-002-G	RB03A-003-G	RB03B-001-G	RB03B-002-G	RB03B-003-C	RB03C-001-G			
Depth to Top	0.50	1.50	2.50	0.50	1.50	2.80	0.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	5A	4AB			
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/8	24/01484/9	24/01484/10	24/01484/11	24/01484/12	24/01484/13	24/01484/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03C-002-G	RB03C-003-G	RB03D-001-G	RB03D-002-G	RB03D-003-G	RB03E-001-G	RB03E-002-G			
Depth to Top	1.50	2.50	0.50	1.50	2.50	0.50	1.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4A	4A	4A	4AB			
% Stones >10mm$_{A}$	3.1	3.8	1.9	3.0	1.9	5.4	<0.1	% w/w	0.1	A-T-044
Nickel$_{D}^{M\#}$	40	36	28	35	38	32	33	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	260	422	285	277	310	169	89	mg/kg	5	A-T-024s
Anthracene$_{A}^{M\#}$	1.37	0.53	0.17	0.21	0.22	0.31	0.21	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	3.08	1.66	0.16	0.35	0.10	1.24	0.85	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	7.09	2.73	0.28	0.45	0.26	2.13	1.38	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	367	446	201	215	216	378	256	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/8	24/01484/9	24/01484/10	24/01484/11	24/01484/12	24/01484/13	24/01484/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03C-002-G	RB03C-003-G	RB03D-001-G	RB03D-002-G	RB03D-003-G	RB03E-001-G	RB03E-002-G			
Depth to Top	1.50	2.50	0.50	1.50	2.50	0.50	1.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4A	4A	4A	4AB			
PFAS (49)										
PFBA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Lab Sample ID	24/01484/8	24/01484/9	24/01484/10	24/01484/11	24/01484/12	24/01484/13	24/01484/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03C-002-G	RB03C-003-G	RB03D-001-G	RB03D-002-G	RB03D-003-G	RB03E-001-G	RB03E-002-G			
Depth to Top	1.50	2.50	0.50	1.50	2.50	0.50	1.50			
Depth To Bottom										
Date Sampled	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	05-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4AB	4A	4A	4A	4AB			
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/15		24/01484/17	24/01484/18	24/01484/19	24/01484/20	24/01484/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03E-003-G		RB03F-002-C	RB03F-003-G	RB03G-001-G	RB03G-002-C	RB03G-003-C			
Depth to Top	2.50		1.60	2.60	0.50	1.60	2.60			
Depth To Bottom										
Date Sampled	06-Feb-24		06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB		3	4AB	4AB	6AB	6A			
% Stones >10mm$_{A}$	5.6		<0.1	5.9	8.4	5.5	6.0	% w/w	0.1	A-T-044
Nickel$_{D}^{M\#}$	40		31	35	48	25	26	mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	392		75	229	371	51	48	mg/kg	5	A-T-024s
Anthracene$_{A}^{M\#}$	0.10		<0.02	0.28	0.09	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.36		<0.04	1.17	0.27	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.51		<0.08	1.96	0.35	<0.08	<0.08	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	278		<10	280	480	<10	<10	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/15		24/01484/17	24/01484/18	24/01484/19	24/01484/20	24/01484/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03E-003-G		RB03F-002-C	RB03F-003-G	RB03G-001-G	RB03G-002-C	RB03G-003-C			
Depth to Top	2.50		1.60	2.60	0.50	1.60	2.60			
Depth To Bottom										
Date Sampled	06-Feb-24		06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB		3	4AB	4AB	6AB	6A			
PFAS (49)										
PFBA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas

Lab Sample ID	24/01484/15		24/01484/17	24/01484/18	24/01484/19	24/01484/20	24/01484/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03E-003-G		RB03F-002-C	RB03F-003-G	RB03G-001-G	RB03G-002-C	RB03G-003-C			
Depth to Top	2.50		1.60	2.60	0.50	1.60	2.60			
Depth To Bottom										
Date Sampled	06-Feb-24		06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24	06-Feb-24			
Sample Type	SOIL - ES		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB		3	4AB	4AB	6AB	6A			
PFEESA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-		-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/22	24/01484/23	24/01484/24	24/01484/25	24/01484/26	[redacted]	24/01484/28	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03H-001-G	RB03H-002-G	RB03H-003-G	RB04A-001-G	RB04B-001-G		RB04C-002-C			
Depth to Top	0.50	1.50	2.50	0.50	0.50		0.60			
Depth To Bottom										
Date Sampled	06-Feb-24	06-Feb-24	06-Feb-24	07-Feb-24	07-Feb-24		07-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES		SOIL - ES			
Sample Matrix Code	4A	1A	1A	4AE	4AB		6A			
% Stones >10mm$_A$	6.3	<0.1	<0.1	8.6	5.6		4.6	% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	33	12	15	48	56		32	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	227	33	40	423	476		154	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.75	<0.02	<0.02	0.49	3.24		0.20	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	3.26	<0.04	<0.04	1.47	8.68		0.42	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	5.94	<0.08	<0.08	2.36	20.4		1.16	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	825	<10	<10	188	222		180	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/22	24/01484/23	24/01484/24	24/01484/25	24/01484/26	[redacted]	24/01484/28	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03H-001-G	RB03H-002-G	RB03H-003-G	RB04A-001-G	RB04B-001-G		RB04C-002-C			
Depth to Top	0.50	1.50	2.50	0.50	0.50		0.60			
Depth To Bottom										
Date Sampled	06-Feb-24	06-Feb-24	06-Feb-24	07-Feb-24	07-Feb-24		07-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES		SOIL - ES			
Sample Matrix Code	4A	1A	1A	4AE	4AB		6A			
PFAS (49)										
PFBA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFPeA$_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFDoA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFODA (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFBS (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFPeS$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFHxS$_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFOS (s)$_A$#	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFDS (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFDoS (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
NFDHA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
PFecHS (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_A$#	-	-	-	-	-		-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/22	24/01484/23	24/01484/24	24/01484/25	24/01484/26	[redacted]	24/01484/28	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB03H-001-G	RB03H-002-G	RB03H-003-G	RB04A-001-G	RB04B-001-G		RB04C-002-C			
Depth to Top	0.50	1.50	2.50	0.50	0.50		0.60			
Depth To Bottom										
Date Sampled	06-Feb-24	06-Feb-24	06-Feb-24	07-Feb-24	07-Feb-24		07-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES		SOIL - ES			
Sample Matrix Code	4A	1A	1A	4AE	4AB		6A			
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-		-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01484

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01484/29	24/01484/30	24/01484/31	24/01484/32	24/01484/33	[redacted]	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	RB04D-001-G	RB05aA-001-G	RB05aA-002-C	RB05aB-001-C	RB05aB-002-G				
Depth to Top	0.50	0.10	0.50	0.10	0.50				
Depth To Bottom									
Date Sampled	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	4A	4AB	4A	4AE	4AB				
% Stones >10mm$_A$	6.6	21.8	7.9	5.9	12.2		% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	44	26	61	24	60		mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	180	43	409	126	206		mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.08	0.65	0.68	1.49	0.49		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.20	3.27	1.67	7.17	1.50		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.38	5.66	2.62	12.4	2.49		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	585	1640	159	1750	504		mg/kg	10	A-T-007s

Lab Sample ID	24/01484/29	24/01484/30	24/01484/31	24/01484/32	24/01484/33	[redacted]	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	RB04D-001-G	RB05aA-001-G	RB05aA-002-C	RB05aB-001-C	RB05aB-002-G				
Depth to Top	0.50	0.10	0.50	0.10	0.50				
Depth To Bottom									
Date Sampled	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	4A	4AB	4A	4AE	4AB				
PFAS (49)									
PFBA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFDoA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFHxDA (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFODA (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFBS (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFPeS$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHpS (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFNS (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFDS (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFUnDS (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFDoS (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
HFPO-TA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFMOPrA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
NFDHA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFMOBA (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
PFecHS (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_A^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas

Lab Sample ID	24/01484/29	24/01484/30	24/01484/31	24/01484/32	24/01484/33	[redacted]	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	RB04D-001-G	RB05aA-001-G	RB05aA-002-C	RB05aB-001-C	RB05aB-002-G				
Depth to Top	0.50	0.10	0.50	0.10	0.50				
Depth To Bottom									
Date Sampled	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24	07-Feb-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	4A	4AB	4A	4AE	4AB				
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-		µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/01484

Date Received: 14/02/2024 (am)

Cool Box Temperatures (°C): 8.4 - 10.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/01484/1	24/01484/2	24/01484/3	24/01484/4	24/01484/5	24/01484/6	24/01484/7	24/01484/8	24/01484/9	24/01484/10
Client Sample No										
Client Sample ID/Depth	RB03A-001-G 0.50m	RB03A-002-G 1.50m	RB03A-003-G 2.50m	RB03B-001-G 0.50m	RB03B-002-G 1.50m	RB03B-003-C 2.80m	RB03C-001-G 0.50m	RB03C-002-G 1.50m	RB03C-003-G 2.50m	RB03D-001-G 0.50m
Date Sampled	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24	05/02/24
A-T-007s	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024
A-T-019s	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024
A-T-024s	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024
A-T-044	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024

Lab Sample ID	24/01484/11	24/01484/12	24/01484/13	24/01484/14	24/01484/15	[redacted]	24/01484/17	24/01484/18	24/01484/19	24/01484/20
Client Sample No										
Client Sample ID/Depth	RB03D-002-G 1.50m	RB03D-003-G 2.50m	RB03E-001-G 0.50m	RB03E-002-G 1.50m	RB03E-003-G 2.50m		RB03F-002-C 1.60m	RB03F-003-G 2.60m	RB03G-001-G 0.50m	RB03G-002-C 1.60m
Date Sampled	05/02/24	05/02/24	06/02/24	06/02/24	06/02/24		06/02/24	06/02/24	06/02/24	06/02/24
A-T-007s	23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024		27/02/2024	27/02/2024	27/02/2024	27/02/2024
A-T-019s	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024		21/02/2024	21/02/2024	21/02/2024	21/02/2024
A-T-024s	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024		28/02/2024	28/02/2024	28/02/2024	28/02/2024
A-T-044	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024		22/02/2024	22/02/2024	22/02/2024	22/02/2024

Lab Sample ID	24/01484/21	24/01484/22	24/01484/23	24/01484/24	24/01484/25	24/01484/26	[redacted]	24/01484/28	24/01484/29	24/01484/30
Client Sample No										
Client Sample ID/Depth	RB03G-003-C 2.60m	RB03H-001-G 0.50m	RB03H-002-G 1.50m	RB03H-003-G 2.50m	RB04A-001-G 0.50m	RB04B-001-G 0.50m		RB04C-002-C 0.60m	RB04D-001-G 0.50m	RB05aA-001-G 0.10m
Date Sampled	06/02/24	06/02/24	06/02/24	06/02/24	07/02/24	07/02/24		07/02/24	07/02/24	07/02/24
A-T-007s	27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024		27/02/2024	27/02/2024	27/02/2024
A-T-019s	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024	21/02/2024		21/02/2024	21/02/2024	21/02/2024
A-T-024s	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024	28/02/2024		28/02/2024	28/02/2024	28/02/2024
A-T-044	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024	22/02/2024		22/02/2024	22/02/2024	22/02/2024

Lab Sample ID	24/01484/31	24/01484/32	24/01484/33	[redacted]
Client Sample No				
Client Sample ID/Depth	RB05aA-002-C 0.50m	RB05aB-001-C 0.10m	RB05aB-002-G 0.50m	
Date Sampled	07/02/24	07/02/24	07/02/24	
A-T-007s	27/02/2024	27/02/2024	27/02/2024	
A-T-019s	21/02/2024	21/02/2024	21/02/2024	
A-T-024s	28/02/2024	28/02/2024	28/02/2024	
A-T-044	22/02/2024	22/02/2024	22/02/2024	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/01767
Issue Number: 1 **Date:** 06 March, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 19/02/24
Date Instructions Received: 21/02/24
Date Analysis Completed: 06/03/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/01767

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/01767/2	24/01767/3	24/01767/4	24/01767/5	24/01767/6	24/01767/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID		RB05aD-001-G	RB05aD-002-G	RB05aD-003-C	RB05aE-001-G	RB05aE-002-G	RB05aF-001-G			
Depth to Top		0.10	0.50	0.70	0.20	0.60	0.40			
Depth To Bottom										
Date Sampled		12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24			
Sample Type		SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code		7	4AB	3	4AB	1	4AB			
% Stones >10mm$_A$		<0.1	8.6	<0.1	21.6	<0.1	13.5	% w/w	0.1	A-T-044
Nickel$_D^{M\#}$		6^U	34	33	31	26	54	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$		50^U	382	88	187	375	292	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$		<0.02^U	0.40	<0.02	0.31	<0.02	0.46	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		<0.04^U	1.74	<0.04	0.97	<0.04	1.01	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		<0.08^U	3.23	<0.08	1.58	<0.08	1.55	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		<10^U	803	<10	795	<10	610	mg/kg	10	A-T-007s

Lab Sample ID		24/01767/2	24/01767/3	24/01767/4	24/01767/5	24/01767/6	24/01767/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID		RB05aD-001-G	RB05aD-002-G	RB05aD-003-C	RB05aE-001-G	RB05aE-002-G	RB05aF-001-G			
Depth to Top		0.10	0.50	0.70	0.20	0.60	0.40			
Depth To Bottom										
Date Sampled		12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24			
Sample Type		SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code		7	4AB	3	4AB	1	4AB			
PFAS (49)										
PFBA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01767

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/01767/2	24/01767/3	24/01767/4	24/01767/5	24/01767/6	24/01767/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID		RB05aD-001-G	RB05aD-002-G	RB05aD-003-C	RB05aE-001-G	RB05aE-002-G	RB05aF-001-G			
Depth to Top		0.10	0.50	0.70	0.20	0.60	0.40			
Depth To Bottom										
Date Sampled		12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24	12-Feb-24			
Sample Type		SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code		7	4AB	3	4AB	1	4AB			
PFEESA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$		<1.00^{U}	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$		-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01767

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01767/8	24/01767/9	24/01767/10	24/01767/11	24/01767/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05aF-002-G	RB02+RB03 EMBANKMENT-001-G	RB02+RB03 EMBANKMENT-002-G	RB02+RB03 EMBANKMENT-003-G	RB02+RB03 EMBANKMENT-004-G					
Depth to Top	0.80									
Depth To Bottom										
Date Sampled	12-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	1A	4AB	4A	4A	4AE					
% Stones >10mm$_A$	<0.1	6.8	11.2	9.2	11.3			% w/w	0.1	A-T-044
Nickel$_D$$^{M\#}$	10	40	47	39	38			mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	110	1230	1060	864	619			mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$	<0.02	0.43	0.24	0.16	0.20			mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$	<0.04	1.45	1.03	0.55	0.96			mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$	<0.08	2.54	1.73	0.97	1.39			mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$	<10	188	82	164	167			mg/kg	10	A-T-007s

Lab Sample ID	24/01767/8	24/01767/9	24/01767/10	24/01767/11	24/01767/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05aF-002-G	RB02+RB03 EMBANKMENT-001-G	RB02+RB03 EMBANKMENT-002-G	RB02+RB03 EMBANKMENT-003-G	RB02+RB03 EMBANKMENT-004-G					
Depth to Top	0.80									
Depth To Bottom										
Date Sampled	12-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	1A	4AB	4A	4A	4AE					
PFAS (49)										
PFBA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01767

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01767/8	24/01767/9	24/01767/10	24/01767/11	24/01767/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05aF-002-G	RB02+RB03 EMBANKMENT-001-G	RB02+RB03 EMBANKMENT-002-G	RB02+RB03 EMBANKMENT-003-G	RB02+RB03 EMBANKMENT-004-G					
Depth to Top	0.80									
Depth To Bottom										
Date Sampled	12-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24	13-Feb-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	1A	4AB	4A	4A	4AE					
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00			µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-			µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/01767

Date Received: 21/02/2024 (am)

Cool Box Temperatures (°C): 13.6 - 14.6

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/01767/2	24/01767/3	24/01767/4	24/01767/5	24/01767/6	24/01767/7	24/01767/8	24/01767/9
Client Sample No									
Client Sample ID/Depth		RB05aD-001-G 0.10m	RB05aD-002-G 0.50m	RB05aD-003-C 0.70m	RB05aE-001-G 0.20m	RB05aE-002-G 0.60m	RB05aF-001-G 0.40m	RB05aF-002-G 0.80m	RB02+RB03 EMBANKMENT-001-G
Date Sampled		12/02/24	12/02/24	12/02/24	12/02/24	12/02/24	12/02/24	12/02/24	13/02/24
A-T-007s		01/03/2024	01/03/2024	01/03/2024	01/03/2024	01/03/2024	01/03/2024	01/03/2024	01/03/2024
A-T-019s		27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024	27/02/2024
A-T-024s		06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024
A-T-044		05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024

Lab Sample ID	24/01767/10	24/01767/11	24/01767/12
Client Sample No			
Client Sample ID/Depth	RB02+RB03 EMBANKMENT-002-G	RB02+RB03 EMBANKMENT-003-G	RB02+RB03 EMBANKMENT-004-G
Date Sampled	13/02/24	13/02/24	13/02/24
A-T-007s	01/03/2024	01/03/2024	01/03/2024
A-T-019s	27/02/2024	27/02/2024	27/02/2024
A-T-024s	06/03/2024	06/03/2024	06/03/2024
A-T-044	05/03/2024	05/03/2024	05/03/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/07363/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 24/07363
Issue Number: 2 **Date:** 29 August, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 26/07/24
Date Instructions Received: 29/07/24
Date Analysis Completed: 29/08/24

Approved by:

[redacted]

Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/07363

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		mg/kg	0.2	A-T-033s
Zinc$_D^{M\#}$		mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		µg/kg	100	A-T-052s
PFOS (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/07363

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07363/8	24/07363/9	24/07363/10					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05-Ash-001	RB05-Ash-002	RB05-Ash-003							
Depth to Top										
Depth To Bottom										
Date Sampled	25-Jun-24	25-Jun-24	25-Jun-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AB	4AB	4AB							
% Stones >10mm$_A$	8.1	18.4	<0.1					% w/w	0.1	A-T-044
Zinc$_D$$^{M\#}$	349	238	301					mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$	0.55	0.27	1.23					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$	0.91	0.47	2.79					mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$	2.32	1.31	7.22					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$	224	310	482					mg/kg	10	A-T-007s
PFOS (s)$_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFOA (s)$_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFPeA$_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxA (s) $_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHpA (s) $_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxS$_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFNA (s)$_A$$^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas

Report Notes

General

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•The results reported herein relate only to the material supplied to the laboratory.
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•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/07363

Date Received: 29/07/2024 (am)

Cool Box Temperatures (°C): 12.5

Lab Sample ID	[redacted]	24/07363/8	24/07363/9	24/07363/10
Client Sample No				
Client Sample ID/Depth		RB05-Ash-001	RB05-Ash-002	RB05-Ash-003
Date Sampled		25/06/24	25/06/24	25/06/24
Deviation Code				
F		✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	[redacted]	24/07363/8	24/07363/9	24/07363/10
Client Sample No				
Client Sample ID/Depth		RB05-Ash-001	RB05-Ash-002	RB05-Ash-003
Date Sampled		25/06/24	25/06/24	25/06/24
TPH total (>C6-C40)		✓	✓	✓
P-24-0047 Selected PAHs		✓	✓	✓
P-24-0047 Selected SVOCs				
P-24-0047 Selected VOCs				
P-24-0047 Table 6/14C Selected PFAS $$		✓	✓	✓

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/07363/8	24/07363/9	24/07363/10
Client Sample No				
Client Sample ID/Depth		RB05-Ash-001	RB05-Ash-002	RB05-Ash-003
Date Sampled		25/06/24	25/06/24	25/06/24
A-T-006s				
A-T-007s		20/08/2024	20/08/2024	20/08/2024
A-T-019s		19/08/2024	19/08/2024	19/08/2024
A-T-024s		20/08/2024	20/08/2024	20/08/2024
A-T-033s				
A-T-044		21/08/2024	21/08/2024	21/08/2024
A-T-052s				

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/03483
Issue Number: 1 **Date:** 23 April, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 05/04/24
Date Instructions Received: 08/04/24
Date Analysis Completed: 23/04/24

Approved by:

[redacted]

Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/03483

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/03483/1	24/03483/2	24/03483/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWBricks	CSBricks	SPBricks							
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-24	22-Mar-24	22-Mar-24							
Sample Type	SOLID	SOLID	SOLID							
Sample Matrix Code	7	7	7							
Nickel$_D^{M\#}$	6^U	17^U	4^U					mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	16^U	56^U	13^U					mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	<0.20^U	<0.20^U	<0.20^U					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.50^U	<0.40^U	0.41^U					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.80^U	<0.80^U	<0.80^U					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	<100^U	<100^U	1010^U					mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	<1.00^U	<1.00^U	<1.00^U					µg/kg	1	Subcon Veritas
TPH Banded 1										
>C6-C8$_A$	-	-	880					mg/kg	5	A-T-007s
>C8-C10$_A$	-	-	4					mg/kg	1	A-T-007s
>C10-C12$_A$	-	-	27					mg/kg	1	A-T-007s
>C12-C16$_A$	-	-	<2					mg/kg	2	A-T-007s
>C16-C21$_A$	-	-	3					mg/kg	2	A-T-007s
>C21-C40$_A$	-	-	96					mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	-	1010					mg/kg	5	A-T-007s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/03483

Date Received: 08/04/2024 (am)

Cool Box Temperatures (°C): 17.8

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/03483/1	24/03483/2	24/03483/3
Client Sample No			
Client Sample ID/Depth	GWBricks	CSBricks	SPBricks
Date Sampled	22/03/24	22/03/24	22/03/24
A-T-007s	19/04/2024	19/04/2024	23/04/2024
A-T-019s	18/04/2024	18/04/2024	18/04/2024
A-T-024s	16/04/2024	16/04/2024	16/04/2024
A-T-044	19/04/2024	19/04/2024	19/04/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08724
Issue Number: 1 **Date:** 17 September, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Franck Baudrain/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 10/09/24
Date Instructions Received: 10/09/24
Date Analysis Completed: 17/09/24

Approved by:

[redacted]

Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		mg/kg	0.2	A-T-033s
Nickel$_D^{M\#}$		mg/kg	1	A-T-024s
Zinc$_D^{M\#}$		mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		µg/kg	100	A-T-052s
PFOS (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/08724/10	24/08724/11				Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID		RB12B-CRSH-001	RB12B-CRSH-002						
Depth to Top									
Depth To Bottom									
Date Sampled		06-Sep-24	06-Sep-24						
Sample Type		SOIL - ES	SOIL - ES						
Sample Matrix Code		4AB	4AB						
% Stones >10mm$_A$		22.1	39.7				% w/w	0.1	A-T-044
Nickel$_D^{M\#}$		18	14				mg/kg	1	A-T-024s
Zinc$_D^{M\#}$		126	54				mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$		0.13	0.37				mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		0.36	0.61				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		0.74	1.62				mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		213	683				mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		Appended	Appended				µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/08724/10	24/08724/11				Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID		RB12B-CRSH-001	RB12B-CRSH-002						
Depth to Top									
Depth To Bottom									
Date Sampled		06-Sep-24	06-Sep-24						
Sample Type		SOIL - ES	SOIL - ES						
Sample Matrix Code		4AB	4AB						
TPH CWG with Clean Up									
Ali >C5-C6$_A$		-	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$		-	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$		-	<1				mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$		-	<1				mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$		-	<1				mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$		-	1				mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$		-	16				mg/kg	1	A-T-055s
Total Aliphatics$_A$		-	18				mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$		-	<1				mg/kg	1	A-T-055s
Aro >C10-C12$_A$		-	<1				mg/kg	1	A-T-055s
Aro >C12-C16$_A$		-	3				mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$		-	9				mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$		-	29				mg/kg	1	A-T-055s
Total Aromatics$_A$		-	41				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$		-	59				mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$		-	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
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Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
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TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/08724

Date Received: 10/09/2024 (am)

Cool Box Temperatures (°C): 17.6, 17.4, 17.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-022s	
A-T-024s	
A-T-033s	
A-T-044	
A-T-052s	
A-T-055s	
Calc-As Recd	

Lab Sample ID	24/08724/10	24/08724/11
Client Sample No		
Client Sample ID/Depth	RB12B-CRSH-001	RB12B-CRSH-002
Date Sampled	06/09/24	06/09/24
A-T-006s		
A-T-007s	12/09/2024	12/09/2024
A-T-019s	12/09/2024	12/09/2024
A-T-022s		16/09/2024
A-T-024s	13/09/2024	13/09/2024
A-T-033s		
A-T-044	12/09/2024	12/09/2024
A-T-052s		
A-T-055s		16/09/2024
Calc-As Recd		16/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

TEST REPORT

Report Number: 2024-1917

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755137
Project Reference: 331B
Issue : 0
Date of Receipt : 11/09/24
Date of Analysis : 13/09/24
Date of Report : 17/09/24
Sample Type : Soil
Customer Sample Identifier : 24/08724/10
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-1917
Customer Sample Identifier : 24/08724/10
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-1918

Customer Name :	Envirolab Ltd
Customer Address :	Housesteads Off Stockport Road Hattersley, SK14 3QU
Order Number :	P0755137
Project Reference:	331B
Issue :	0
Date of Receipt :	11/09/24
Date of Analysis :	13/09/24
Date of Report :	17/09/24
Sample Type :	Soil
Customer Sample Identifier :	24/08724/11
Sample Condition :	Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-1918
Customer Sample Identifier : 24/08724/11
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/06875
Issue Number: 1 **Date:** 31 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Franck Baudrain/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 12/07/24
Date Instructions Received: 15/07/24
Date Analysis Completed: 31/07/24

Approved by:

[redacted]

Richard Wong
Client Manager

Envirolab Job Number: 24/06875

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/06875/1	24/06875/2	24/06875/3	24/06875/4	24/06875/5	24/06875/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05a-S-001	RB05a-S-002	RB05a-S-003	RB05a-S-004	GWA1-SF2-001	GWA1-SF2-002				
Depth to Top										
Depth To Bottom										
Date Sampled	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6A	5A	6A	4A	4ABE	4ABE				
% Stones >10mm$_{A}$	<0.1	4.7	2.0	1.1	12.6	8.7		% w/w	0.1	A-T-044
Nickel$_{D}^{M\#}$	24	22	25	10	18	20		mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	46	52	53	48	306	168		mg/kg	5	A-T-024s
Anthracene$_{A}^{M\#}$	<0.02	<0.02	<0.02	<0.02	0.61	2.26		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	<0.04	<0.04	<0.04	<0.04	1.49	4.44		mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	<0.08	<0.08	<0.08	0.09	3.56	9.30		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	25	22	<10	<10	594	1270		mg/kg	10	A-T-007s
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/06875

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/06875/1	24/06875/2	24/06875/3	24/06875/4	24/06875/5	24/06875/6	[redacted]	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RB05a-S-001	RB05a-S-002	RB05a-S-003	RB05a-S-004	GWA1-SF2-001	GWA1-SF2-002				
Depth to Top										
Depth To Bottom										
Date Sampled	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24	11-Jul-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6A	5A	6A	4A	4ABE	4ABE				
TPH Banded 1										
>C6-C8$_A$	-	-	-	-	-	<5		mg/kg	5	A-T-007s
>C8-C10$_A$	-	-	-	-	-	<1		mg/kg	1	A-T-007s
>C10-C12$_A$	-	-	-	-	-	3		mg/kg	1	A-T-007s
>C12-C16$_A$	-	-	-	-	-	34		mg/kg	2	A-T-007s
>C16-C21$_A$	-	-	-	-	-	168		mg/kg	2	A-T-007s
>C21-C40$_A$	-	-	-	-	-	1070		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	-	-	-	-	1280		mg/kg	5	A-T-007s

Envirolab Job Number: 24/06875

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]				Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID							
Depth to Top							
Depth To Bottom							
Date Sampled							
Sample Type							
Sample Matrix Code							
Hazardous Waste Assessment							Assessment
% Moisture at <40C$_A$					% w/w	0.1	A-T-044
% Stones >10mm$_A$					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$					pH	0.01	A-T-031s
Arsenic$_D$$^{M\#}$					mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$					mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$					mg/kg	1	A-T-024s
Mercury$_D$					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$					mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$					mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$					mg/kg	10	A-T-007s

Envirolab Job Number: 24/06875

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

	[redacted]				Units	Limit of Detection	Method ref
Lab Sample ID							
Client Sample No							
Client Sample ID							
Depth to Top							
Depth To Bottom							
Date Sampled							
Sample Type							
Sample Matrix Code							
Asbestos in Soil (inc. matrix) ^							
Asbestos in soil$_{D}^{\#}$							A-T-045
Asbestos Matrix (visual)$_{D}$							A-T-045
Asbestos Matrix (microscope)$_{D}$							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$							A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)							
Asbestos in soil % composition (hand picking and weighing)$_{D}$					% w/w	0.001	A-T-054

Envirolab Job Number: 24/06875

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]				**Units**	**Limit of Detection**	**Method ref**
Client Sample No							
Client Sample ID							
Depth to Top							
Depth To Bottom							
Date Sampled							
Sample Type							
Sample Matrix Code							
PAH-16MS							
Acenaphthene$_A^{M\#}$					**mg/kg**	**0.01**	A-T-019s
Acenaphthylene$_A^{M\#}$					**mg/kg**	**0.01**	A-T-019s
Benzo(a)anthracene$_A^{M\#}$					**mg/kg**	**0.04**	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$					**mg/kg**	**0.05**	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$					**mg/kg**	**0.05**	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$					**mg/kg**	**0.07**	A-T-019s
Chrysene$_A^{M\#}$					**mg/kg**	**0.06**	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$					**mg/kg**	**0.04**	A-T-019s
Fluorene$_A^{M\#}$					**mg/kg**	**0.01**	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$					**mg/kg**	**0.03**	A-T-019s
Naphthalene $_A^{M\#}$					**mg/kg**	**0.03**	A-T-019s
Phenanthrene$_A^{M\#}$					**mg/kg**	**0.03**	A-T-019s
Pyrene$_A^{M\#}$					**mg/kg**	**0.07**	A-T-019s
Total PAH-16MS$_A^{M\#}$					**mg/kg**	**0.01**	A-T-019s
TPH Total with ID + GC Trace							
TPH FID Chromatogram$_A$							A-T-007s
TPH ID Interpretation$_A$							A-T-007s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/06875

Date Received: 15/07/2024 (am)

Cool Box Temperatures (°C): 15.4 - 15.8

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/06875/1	24/06875/2	24/06875/3	24/06875/4	24/06875/5	24/06875/6	[redacted]
Client Sample No							
Client Sample ID/Depth	RB05a-S-001	RB05a-S-002	RB05a-S-003	RB05a-S-004	GWA1-SF2-001	GWA1-SF2-002	
Date Sampled	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	
A-T-004s							
A-T-007s	23/07/2024	23/07/2024	22/07/2024	22/07/2024	22/07/2024	22/07/2024	
A-T-019s	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	
A-T-022s							
A-T-024s	22/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024	23/07/2024	
A-T-025w							
A-T-026w							
A-T-026w (F)							
A-T-030s							
A-T-031s							
A-T-031w							
A-T-032s							
A-T-032w							
A-T-037w							
A-T-040s							
A-T-044	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	
A-T-045							
A-T-050w							
A-T-054							
A-T-ANCs							
Assessment							
Calc							
Calc-no stones							
Probe (w)							

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-004s	
A-T-007s	
A-T-019s	
A-T-022s	
A-T-024s	
A-T-025w	
A-T-026w	
A-T-026w (F)	
A-T-030s	
A-T-031s	
A-T-031w	
A-T-032s	
A-T-032w	
A-T-037w	
A-T-040s	
A-T-044	
A-T-045	
A-T-050w	
A-T-054	
A-T-ANCs	
Assessment	
Calc	
Calc-no stones	
Probe (w)	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/01978/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 24/01978
Issue Number: 2 **Date:** 21 March, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 26/02/24
Date Instructions Received: 27/02/24
Date Analysis Completed: 21/03/24

Approved by:

[redacted]

Richard Wong
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01978/1	24/01978/2	24/01978/3	24/01978/4	24/01978/5	24/01978/6	24/01978/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSA-001-C	CSB-001-G	CSC-001-C	CSD-001-G	CSE-001-G	CSF-001-G	CSG-001-G			
Depth to Top	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
Depth To Bottom										
Date Sampled	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	6AE	4AE	4AE	4ABE	4AB	4AB	4AB			
% Stones >10mm$_{A}$	16.0	15.2	11.0	27.4	29.3	2.7	5.1	% w/w	0.1	A-T-044
Anthracene$_{A}^{M\#}$	1.81	1.08	2.14	1.12	0.98	2.03	1.01	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	3.19	2.81	4.01	3.63	3.20	3.68	2.94	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	9.22	7.61	13.6	8.77	7.63	11.6	7.63	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	488	1100	1130	551	706	1150	727	mg/kg	10	A-T-007s

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01978/1	24/01978/2	24/01978/3	24/01978/4	24/01978/5	24/01978/6	24/01978/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSA-001-C	CSB-001-G	CSC-001-C	CSD-001-G	CSE-001-G	CSF-001-G	CSG-001-G			
Depth to Top	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
Depth To Bottom										
Date Sampled	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	6AE	4AE	4AE	4ABE	4AB	4AB	4AB			
PFAS (49)										
PFBA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	1.05	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01978/1	24/01978/2	24/01978/3	24/01978/4	24/01978/5	24/01978/6	24/01978/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSA-001-C	CSB-001-G	CSC-001-C	CSD-001-G	CSE-001-G	CSF-001-G	CSG-001-G			
Depth to Top	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
Depth To Bottom										
Date Sampled	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24	20-Feb-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	6AE	4AE	4AE	4ABE	4AB	4AB	4AB			
PFEESA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-	-	-	-	-	-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01978/8									
Client Sample No										
Client Sample ID	CSH-001-G									
Depth to Top	0.20									
Depth To Bottom										
Date Sampled	20-Feb-24									
Sample Type	SOIL - ES									
Sample Matrix Code	4AB									
								Units	Limit of Detection	Method ref
Hazardous Waste Assessment	-									Assessment
% Moisture at <40C$_A$	-							% w/w	0.1	A-T-044
% Stones >10mm$_A$	20.3							% w/w	0.1	A-T-044
Arsenic$_D^{M\#}$	-							mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	-							mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	-							mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	-							mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-							mg/kg	1	A-T-040s
Lead$_D^{M\#}$	-							mg/kg	1	A-T-024s
Mercury$_D$	-							mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	-							mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	-							mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	-							mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	1.66							mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	3.43							mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	11.1							mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	1470							mg/kg	10	A-T-007s

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	**24/01978/8**			**Units**	**Limit of Detection**	**Method ref**
Client Sample No						
Client Sample ID	**CSH-001-G**					
Depth to Top	**0.20**					
Depth To Bottom						
Date Sampled	**20-Feb-24**					
Sample Type	**SOIL - ES**					
Sample Matrix Code	**4AB**					
Asbestos in Soil (inc. matrix) ^						
Asbestos in soil$_{D}^{\#}$	-					A-T-045
Asbestos Matrix (visual)$_{D}$	-					A-T-045
Asbestos Matrix (microscope)$_{D}$	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-					A-T-045

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	**24/01978/8**				**Units**	**Limit of Detection**	**Method ref**
Client Sample No							
Client Sample ID	**CSH-001-G**						
Depth to Top	**0.20**						
Depth To Bottom							
Date Sampled	**20-Feb-24**						
Sample Type	**SOIL - ES**						
Sample Matrix Code	**4AB**						
PAH-16MS							
Acenaphthene$_A^{M\#}$	-				mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-				mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-				mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	-				mg/kg	0.04	A-T-019s
Fluorene$_A^{M\#}$	-				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-				mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-				mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-				mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-				mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	-				mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/01978/8	[redacted]			Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	CSH-001-G						
Depth to Top	0.20						
Depth To Bottom							
Date Sampled	20-Feb-24						
Sample Type	SOIL - ES						
Sample Matrix Code	4AB						
PFAS (49)							
PFBA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFDA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFUnA; PFUdA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFDoA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFTrDA; PFTriA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFTeA (s) SUBCON Veritas$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFHxDA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFODA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFBS (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFPeS$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFHpS (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFOS (s)$_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
PFNS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFDS (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFUnDS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFDoS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
HFPO-DA (Gen X) (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
HFPO-TA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
DONA; ADONA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFMOPrA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
NFDHA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFMOBA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
PFecHS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
3:3 FTCA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
5:3 FTCA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
7:3 FTCA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/01978

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	**24/01978/8**	[redacted]			**Units**	**Limit of Detection**	**Method ref**
Client Sample No							
Client Sample ID	**CSH-001-G**						
Depth to Top	**0.20**						
Depth To Bottom							
Date Sampled	**20-Feb-24**						
Sample Type	**SOIL - ES**						
Sample Matrix Code	**4AB**						
PFEESA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
6:2 Cl-PFESA; 9Cl-PF3ONS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
8:2 Cl-PFESA; 11Cl-PF3OUdS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
4:2 FTSA; 4:2 FTS (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00				µg/kg	1	Subcon Veritas
8:2 FTSA; 8:2 FTS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
FBSA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
FHxSA (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
FOSA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
MeFOSA; N-MeFOSA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
EtFOSA; N-EtFOSA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
MeFOSE (s) $_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
EtFOSE (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
NMeFOSAA; MeFOSAA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
NEtFOSAA; EtFOSAA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
FOSAA (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
10:2 FTS (s)$_{A}^{\#}$	-				µg/kg	1	Subcon Veritas
TPH Total with ID + GC Trace							
TPH FID Chromatogram$_{A}$	-						A-T-007s
TPH ID Interpretation$_{A}$	-						A-T-007s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/01978

Date Received: 27/02/2024 (am)

Cool Box Temperatures (°C): 10.8-11.3

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/01978/1	24/01978/2	24/01978/3	24/01978/4	24/01978/5	24/01978/6	24/01978/7	24/01978/8	[redacted]
Client Sample No									
Client Sample ID/Depth	CSA-001-C 0.20m	CSB-001-G 0.20m	CSC-001-C 0.20m	CSD-001-G 0.20m	CSE-001-G 0.20m	CSF-001-G 0.20m	CSG-001-G 0.20m	CSH-001-G 0.20m	
Date Sampled	20/02/24	20/02/24	20/02/24	20/02/24	20/02/24	20/02/24	20/02/24	20/02/24	
A-T-004s									
A-T-007s	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	06/03/2024	
A-T-019s	08/03/2024	08/03/2024	11/03/2024	11/03/2024	11/03/2024	11/03/2024	11/03/2024	11/03/2024	
A-T-022s									
A-T-024s									
A-T-025w									
A-T-026w									
A-T-026w (F)									
A-T-030s									
A-T-031s									
A-T-031w									
A-T-032s									
A-T-032w									
A-T-037w									
A-T-040s									
A-T-044	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	05/03/2024	
A-T-045									
A-T-050w									
A-T-ANCs									
Assessment									
Calc									
Calc-no stones									
Probe (w)									

Lab Sample ID		[redacted]	
Client Sample No			
Client Sample ID/Depth	T		02
Date Sampled			
A-T-004s			
A-T-007s			
A-T-019s			
A-T-022s			
A-T-024s			
A-T-025w			
A-T-026w			
A-T-026w (F)			
A-T-030s			
A-T-031s			
A-T-031w			
A-T-032s			
A-T-032w			
A-T-037w			
A-T-040s			
A-T-044			
A-T-045			
A-T-050w			
A-T-ANCs			
Assessment			
Calc			
Calc-no stones			
Probe (w)			

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/06699
Issue Number: 1 **Date:** 19 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Bridgette Shangase
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 08/07/24
Date Instructions Received: 09/07/24
Date Analysis Completed: 19/07/24

Approved by:

[redacted]

Holly Neary-King
Sales Manager

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Moisture at <40C$_A$		% w/w	0.1	A-T-044
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		mg/kg	0.2	A-T-033s
Antimony$_D$		mg/kg	5	A-T-024s
Arsenic$_D^{M\#}$		mg/kg	1	A-T-024s
Barium$_D$		mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$		mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$		mg/kg	1	A-T-024s
Chromium$_D^{M\#}$		mg/kg	1	A-T-024s
Lead$_D^{M\#}$		mg/kg	1	A-T-024s
Mercury$_D$		mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$		mg/kg	1	A-T-024s
Selenium$_D^{M\#}$		mg/kg	1	A-T-024s
Tin$_D$		mg/kg	5	A-T-024s
Zinc$_D^{M\#}$		mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		µg/kg	1	A-T-006s
Dieldrin$_A$		mg/kg	0.01	A-T-056
gamma-Hexachlorocyclohexane (HCH)$_A$		mg/kg	0.01	A-T-056
Permethrin I (cis)$_A$		mg/kg	0.01	A-T-056
Permethrin II (trans)$_A$		mg/kg	0.01	A-T-056
2-Methylnaphthalene$_A$		µg/kg	100	A-T-052s
Pentachlorophenol$_A$		µg/kg	100	A-T-052s

Envirolab Job Number: 24/06699

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

	[redacted]	Units	Limit of Detection	Method ref
Lab Sample ID				
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
PAH-16MS				
Acenaphthene$_{A}^{M\#}$		mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$		mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$		mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$		mg/kg	0.04	A-T-019s
Fluorene$_{A}^{M\#}$		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$		mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$		mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$		mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$		mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$		mg/kg	0.01	A-T-019s
TPH Banded 1				
>C6-C8$_{A}$		mg/kg	5	A-T-007s
>C8-C10$_{A}$		mg/kg	1	A-T-007s
>C10-C12$_{A}$		mg/kg	1	A-T-007s
>C12-C16$_{A}$		mg/kg	2	A-T-007s
>C16-C21$_{A}$		mg/kg	2	A-T-007s
>C21-C40$_{A}$		mg/kg	5	A-T-007s
Total TPH Banded 1$_{A}$		mg/kg	5	A-T-007s

Envirolab Job Number: 24/06699

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/06699/8	24/06699/9	24/06699/10	24/06699/11	24/06699/12	24/06699/13	24/06699/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSA-001-C-ZN	CSB-001-G-ZN	CSC-001-C-ZN	CSD-001-G-ZN	CSE-001-G-ZN	CSF-001-G-ZN	CSG-001-G-ZN			
Depth to Top										
Depth To Bottom										
Date Sampled	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4ABE	4ABE	4ABE	5ABE	6ABE	4ABE			
% Stones >10mm$_A$	10.6	9.1	25.3	14.0	19.7	36.2	13.5	% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	33	34	31	32	31	21	34	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	324	302	214	262	247	130	272	mg/kg	5	A-T-024s

Envirolab Job Number: 24/06699

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/06699/15							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSH-001-G-ZN									
Depth to Top										
Depth To Bottom										
Date Sampled	03-Jul-24									
Sample Type	SOIL - ES									
Sample Matrix Code	4AB									
% Stones >10mm$_A$	20.6							% w/w	0.1	A-T-044
Nickel$_D^{M\#}$	24							mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	132							mg/kg	5	A-T-024s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/06699

Date Received: 09/07/2024 (am)

Cool Box Temperatures (°C): 18.5, 18.2

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
Deviation Code	
F	

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
TPH Banded 1	

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/06699/8	24/06699/9
Client Sample No			
Client Sample ID/Depth		CSA-001-C-ZN	CSB-001-G-ZN
Date Sampled		03/07/24	03/07/24
A-T-006s			
A-T-007s			
A-T-019s			
A-T-024s		12/07/2024	12/07/2024
A-T-033s			
A-T-044		16/07/2024	16/07/2024
A-T-052s			
A-T-056			

Lab Sample ID	24/06699/10	24/06699/11	24/06699/12	24/06699/13	24/06699/14	24/06699/15
Client Sample No						
Client Sample ID/Depth	CSC-001-C-ZN	CSD-001-G-ZN	CSE-001-G-ZN	CSF-001-G-ZN	CSG-001-G-ZN	CSH-001-G-ZN
Date Sampled	03/07/24	03/07/24	03/07/24	03/07/24	03/07/24	03/07/24
A-T-006s						
A-T-007s						
A-T-019s						
A-T-024s	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024	12/07/2024
A-T-033s						
A-T-044	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024
A-T-052s						
A-T-056						

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/02234
Issue Number: 1 **Date:** 21 March, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 04/03/24
Date Instructions Received: 05/03/24
Date Analysis Completed: 21/03/24

Approved by:

[redacted]

Richard Wong
Client Manager

Envirolab Job Number: 24/02234

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/02234/3	[redacted]		Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID		CSI-001-G					
Depth to Top							
Depth To Bottom							
Date Sampled		26-Feb-24					
Sample Type		SOIL - ES					
Sample Matrix Code		4AB					
Hazardous Waste Assessment		-					Assessment
% Moisture at <40C$_A$		-			% w/w	0.1	A-T-044
% Stones >10mm$_A$		16.9			% w/w	0.1	A-T-044
pH$_D$$^{M\#}$		-			pH	0.01	A-T-031s
Arsenic$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$		-			mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$		-			mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Mercury$_D$		-			mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$		-			mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$		-			mg/kg	5	A-T-024s
Anthracene$_A$$^{M\#}$		1.88			mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$		3.05			mg/kg	0.04	A-T-019s
Fluoranthene$_A$$^{M\#}$		9.23			mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$		633			mg/kg	10	A-T-007s
PFOS (s)$_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFOA (s)$_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFPeA$_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFHxA (s) $_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFHpA (s) $_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFHxS$_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas
PFNA (s)$_A$$^{\#}$		Appended			µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/02234

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	**24/02234/3**	[redacted]		**Units**	**Limit of Detection**	**Method ref**
Client Sample No							
Client Sample ID		**CSI-001-G**					
Depth to Top							
Depth To Bottom							
Date Sampled		**26-Feb-24**					
Sample Type		**SOIL - ES**					
Sample Matrix Code		**4AB**					
Asbestos in Soil (inc. matrix) ^							
Asbestos in soil$_{D}^{\#}$		-					A-T-045
Asbestos Matrix (visual)$_{D}$		-					A-T-045
Asbestos Matrix (microscope)$_{D}$		-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$		-					A-T-045

Envirolab Job Number: 24/02234

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/02234/3	[redacted]		Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID		CSI-001-G					
Depth to Top							
Depth To Bottom							
Date Sampled		26-Feb-24					
Sample Type		SOIL - ES					
Sample Matrix Code		4AB					
PAH-16MS							
Acenaphthene$_A^{M\#}$		-			mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$		-			mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A^{M\#}$		-			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$		-			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$		-			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$		-			mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$		-			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$		-			mg/kg	0.04	A-T-019s
Fluorene$_A^{M\#}$		-			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$		-			mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$		-			mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$		-			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$		-			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$		-			mg/kg	0.01	A-T-019s
TPH Total with ID + GC Trace							
TPH FID Chromatogram$_A$		-					A-T-007s
TPH ID Interpretation$_A$		-					A-T-007s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/02234

Date Received: 05/03/2024 (am)

Cool Box Temperatures (°C): 13.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/02234/3	[redacted]
Client Sample No			
Client Sample ID/Depth		CSI-001-G	
Date Sampled		26/02/24	
A-T-007s		11/03/2024	
A-T-019s		13/03/2024	
A-T-024s			
A-T-031s			
A-T-040s			
A-T-044		18/03/2024	
A-T-045			
Assessment			

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/03119
Issue Number: 1 **Date:** 16 April, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 25/03/24
Date Instructions Received: 26/03/24
Date Analysis Completed: 16/04/24

Approved by:

[redacted]
Amy Riding
Administration Assistant

Envirolab Job Number: 24/03119

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/03119/1	24/03119/2	24/03119/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSJ-001-C	CSK-001-C	CSL-001-C							
Depth to Top										
Depth To Bottom										
Date Sampled	21-Mar-24	21-Mar-24	21-Mar-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	5A	6A							
% Stones >10mm$_{A}$	4.5	5.5	5.4					% w/w	0.1	A-T-044
Nickel$_{D}^{M\#}$	25	17	24					mg/kg	1	A-T-024s
Zinc$_{D}^{M\#}$	113	29	52					mg/kg	5	A-T-024s
Anthracene$_{A}^{M\#}$	0.05	0.74	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.13	1.08	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.28	3.63	<0.08					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	31	91	<10					mg/kg	10	A-T-007s
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/03119

Date Received: 26/03/2024 (am)

Cool Box Temperatures (°C): 12.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/03119/1	24/03119/2	24/03119/3
Client Sample No			
Client Sample ID/Depth	CSJ-001-C	CSK-001-C	CSL-001-C
Date Sampled	21/03/24	21/03/24	21/03/24
A-T-007s	16/04/2024	16/04/2024	16/04/2024
A-T-019s	04/04/2024	04/04/2024	04/04/2024
A-T-024s	03/04/2024	03/04/2024	03/04/2024
A-T-044	05/04/2024	05/04/2024	05/04/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Appendix I

Remedial excavation verification testing

Gasworks TP700 series verification testing

Lab Sample ID Client Sample ID Depth Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/03989/1 TP700 1 18-Apr-24 Soil - ES	24/03989/2 TP701 1 18-Apr-24 Soil - ES	24/03989/3 TP702 1.5 18-Apr-24 Soil - ES
Ammoniacal nitrogen as N	mg/kg	4.5	0.2	A-T-033s	6	1.0	0.5	1.5	1.4	<0.2	1.4	<0.2
Anthracene	mg/kg	31	0.02	A-T-019s	6	1.4	1.2	2.6	2.83	2.45	1.02	<0.02
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	6	5.4	7.2	13.0	18.9	18.9	1.18	0.05
Fluoranthene	mg/kg	120	0.08	A-T-019s	6	7.6	6.6	14.6	14.9	14.7	3.54	<0.08
TPH total (>C6-C40)	mg/kg	1000*	10	A-T-007s	6	675.7	704.5	1415.0	1680	1680	105	24
Ethylbenzene	mg/kg	4.54	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
o-Xylene	mg/kg	6.5	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
Isopropylbenzene	mg/kg	0.58	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
n-Propylbenzene	mg/kg	0.62	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
1,3,5-Trimethylbenzene	mg/kg	1.33	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
1,2,4-Trimethylbenzene	mg/kg	0.72	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
4-Isopropyltoluene	mg/kg	98.5	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
n-Butylbenzene	mg/kg	12.1	0.001	A-T-006s	6	N/A	N/A	N/A	<0.025	<0.025	<0.025	<0.001
2-Methylnaphthalene	mg/kg	7.33	0.1	A-T-052s	6	2.3	3.5	5.9	6.3	6.3	<0.1	<0.1
>C8-C10	mg/kg	153	1	A-T-007s	2	2.5	0.7	8.9	3	3		
>C10-C12	mg/kg	76	1	A-T-007s	2	5.0	1.4	17.7	6	4		
>C12-C16	mg/kg	208	2	A-T-007s	2	53.0	15.6	192.8	64	64		
>C16-C21	mg/kg	323	2	A-T-007s	2	241.5	77.1	934.0	296	296		
>C21-C40	mg/kg	2453	5	A-T-007s	2	1235.0	106.1	2188.0	1310	1310		

24/03989/4	24/03989/5	24/03989/6
TP703	TP704	TP705
1	0.8	2
18-Apr-24	18-Apr-24	18-Apr-24
Soil - ES	Soil - ES	Soil - ES
1.1	<0.2	0.4
2.83	0.57	0.22
7.74	4.14	0.49
14.9	3.68	1.18
1400	609	236
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
<0.025	<0.001	<0.001
0.424	0.181	<0.1

2
6
42
187
1160

Gasworks verification testing

Lab Sample ID Client Sample ID Date Sampled Sample Type	Units	Verification target	Limit of detection	Method	Number of samples	Mean	Standard deviation	95% upper confidence limit	Maximum	24/06239/4 GWVE-001-COMP 20-Jun-24 Soil - ES	24/06239/5 GWVE-002-COMP 20-Jun-24 Soil - ES
Ammoniacal nitrogen as N	mg/kg	4.5	0.2	A-T-033s	59	3.8	3.7	4.7	18.3	1.1	0.8
Anthracene	mg/kg	31	0.02	A-T-019s	57	0.4	0.7	0.6	3.6	<0.02	<0.02
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	57	0.8	1.4	1.2	6.7	<0.04	0.06
Fluoranthene	mg/kg	120	0.08	A-T-019s	57	1.0	1.5	1.4	6.2	<0.08	0.1
Ethylbenzene	mg/kg	4.54	1	A-T-006s	57	0.029	0.047	0.042	0.142	<0.005	<0.005
o-Xylene	mg/kg	6.5	1	A-T-006s	57	0.015	0.019	0.020	0.059	<0.005	<0.005
Isopropylbenzene	mg/kg	0.58	1	A-T-006s	57	0.008	0.006	0.010	0.016	<0.005	<0.005
n-Propylbenzene	mg/kg	0.62	1	A-T-006s	57	0.007	0.003	0.007	0.011	<0.005	<0.005
1,3,5-Trimethylbenzene	mg/kg	1.33	1	A-T-006s	57	0.013	0.012	0.016	0.036	<0.005	<0.005
1,2,4-Trimethylbenzene	mg/kg	0.72	1	A-T-006s	57	0.022	0.026	0.028	0.084	<0.005	<0.005
4-Isopropyltoluene	mg/kg	98.5	1	A-T-006s	57	0.007	N/A	N/A	0.007	<0.005	<0.005
n-Butylbenzene	mg/kg	12.1	1	A-T-006s	57	<0.025	N/A	N/A	<0.025	<0.005	<0.005
2-Methylnaphthalene	mg/kg	7.33	100	A-T-052s	57	0.6	0.7	0.8	2.9	<0.100	<0.100
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	57	181.3	257.0	249.5	1100.0	<10	<10
>C8-C10	mg/kg	153	1	A-T-007s	1	N/A	N/A	N/A	5		
>C10-C12	mg/kg	76	1	A-T-007s	1	N/A	N/A	N/A	9		
>C12-C16	mg/kg	208	2	A-T-007s	1	N/A	N/A	N/A	66		
>C16-C21	mg/kg	323	2	A-T-007s	1	N/A	N/A	N/A	171		
>C21-C40	mg/kg	2453	5	A-T-007s	1	N/A	N/A	N/A	431		

Gasworks verification testing

24/06239/6	24/09693/2	24/07603/1	24/07603/3	24/07788/1	24/08724/1	24/08724/3	24/08724/5	24/07878/1	24/07878/2	24/07878/3	24/07878/4	24/07878/7	24/07878/9
GWVE-003-COMP	GWVE-04A-COMP	GWVE-005-R	GWVE-006-R	GWVE-007-R-E	GWVE-07R-N1	GWVE-07R-N2	GWVE-07R-N3	GWVE-007-R-C1	GWVE-007-R-C2	GWVE-007-R-C3	GWVE-007-R-C4	GWVE-007-R-C5C	GWVE-007-R-S1B
20-Jun-24	04-Oct-2024	01-Aug-24	01-Aug-24	07-Aug-24	06-Sep-24	06-Sep-24	06-Sep-24	08-Aug-24	08-Aug-24	08-Aug-24	08-Aug-24	08-Aug-24	08-Aug-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
1.7	3.8	5	0.7	2.8	1.7	1.8	1.6	0.5	3.2	1.6	1.8	2.2	2.4
0.03	0.18	0.07	<0.02	0.11	0.07	0.04	0.02	0.3	<0.02	<0.02	0.09	0.27	0.09
0.16	0.31	0.18	<0.04	0.26	0.51	<0.04	<0.04	1.03	0.07	<0.04	0.7	0.1	0.1
0.26	0.66	0.32	<0.08	0.36	0.36	<0.08	<0.08	1.68	<0.08	<0.08	0.51	0.16	0.14
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.01	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.007	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.006	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.007	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.01	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	0.047	<0.025	<0.001	<0.001	<0.001	<0.005	0.002	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	<0.005	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
<0.005	<0.001	<0.001	<0.001	<0.001	<0.025	<0.005	<0.025	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005
0.112	<0.100	<0.100	<0.100	<0.1	<0.1	0.962	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<10	66	65	13	42	<10	18	<10	450	206	<10	16	659	62

Gasworks verification testing

24/07878/11	24/07878/16	24/06699/2	24/07603/5	24/06699/4	24/11758/2	24/11758/3	24/11758/4	24/07091/2	24/08495/4	24/08495/1	24/08495/5	24/09693/1	24/11256/20
GWVE-007-R-S2B	GWVE-007-R-S3D	GWVE-008-COMP	GWVE-009-R	GWVE-0010-COMP	GWVE-11R-A	GWVE-11R-B	GWVE-11R-C	GWVE-012-COMP	GWVE-013-COMP-R	GWVE-014-COMP-R	GWVE-015-COMP-R	GWVE-016-COMP	GW16L-01
08-Aug-24	08-Aug-24	03-Jul-24	01-Aug-24	03-Jul-24	29-Nov-24	29-Nov-24	29-Nov-24	17-Jul-24	30-Aug-24	30-Aug-24	30-Aug-24	04-Oct-24	14-Nov-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
2.3	2	0.4	2.4	0.4	1.3	1.2	1.1	1.6	4.6	2.2	2.9	0.8	1.8
0.06	0.38	0.05	0.05	0.58	1.5	0.13	1.28	<0.02	3.56	<0.02	<0.02	0.31	
0.07	0.09	0.18	0.1	5.48	6.7	0.56	2.31	<0.04	2.43	0.06	<0.04	0.54	
<0.08	0.18	0.22	0.13	2.03	<0.80	0.98	6.16	<0.08	6.05	<0.08	<0.08	1.05	
<0.001	<0.025	<0.005	<0.001	<0.025	<0.001	<0.001	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	<0.025	<0.005	<0.001	<0.025	0.022	0.002	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	<0.025	<0.005	<0.001	<0.025	0.001	<0.001	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	<0.025	<0.005	<0.001	<0.025	0.005	<0.001	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	<0.025	<0.005	<0.001	<0.025	0.028	<0.001	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	0.084	<0.005	<0.001	<0.025	0.037	0.001	<0.001	<0.005	<0.025	<0.001	<0.001	0.006	
<0.001	<0.025	<0.005	<0.001	<0.025	<0.001	<0.001	<0.001	<0.005	<0.025	<0.001	<0.001	<0.001	
<0.001	<0.025	<0.005	<0.001	<0.025	<0.001	**<0.001**	<0.001	<0.005	**<0.025**	<0.001	<0.001	<0.001	
<0.1	<0.1	<0.100	<0.100	0.169	0.256	<0.100	<0.100	<0.100	0.192	<0.1	<0.1	<0.1	
959	257	20	51	1100	690	64	159	20	442	18	<10	66	

5
9
66
171
431

Gasworks verification testing

24/11256/21	24/09938/1	24/09938/2	24/09938/3	24/09938/4	24/09938/5	24/09938/6	24/11256/13	24/09938/7	24/09938/8	24/11758/5	25/00690/9	25/00690/10	24/09938/10
GW16L-02	GWVE-017-A	GWVE-017-B	GWVE-017-C	GWVE-018-A	GWVE-018-B	GWVE-018-C	GWVE-18B-L	GWVE-019-A	GWVE-019-B	GWVE-19R-A	GWVE-019R2-B	GWVE-019R2-C	GWVE-020-A
14-Nov-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	14-Nov-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	29-Nov-24 Soil - ES	24-Jan-25 Soil - ES	24-Jan-25 Soil - ES	11-Oct-24 Soil - ES
2.2	2.9	11.3	11.1	12.9		5.6	3.3	5.8	18.3	2.8	8.9	4.7	7.8
	2.04	<0.02	0.24	0.08	0.88	0.09		0.31	0.47	1.14	<0.02	<0.02	0.14
	4.1	0.08	0.36	0.11	1.32	0.16		0.39	0.84	1.76	<0.04	<0.04	0.37
	5.25	<0.08	0.46	0.16	1.94	0.29		0.45	1.08	2.79	0.12	<0.08	0.47
	0.022	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	0.036	<0.001	<0.001	<0.1
	0.028	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.025	0.001	<0.001	<0.1
	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.025	<0.001	<0.001	<0.1
	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.025	<0.001	<0.001	<0.1
	0.014	<0.005	<0.005	<0.005	<0.005	<0.005		0.014	<0.005	0.036	0.001	<0.001	<0.1
	0.035	<0.005	<0.005	<0.005	<0.005	<0.005		0.013	<0.005	0.066	0.004	<0.001	<0.1
	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		0.007	<0.005	<0.025	<0.001	<0.001	<0.1
	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.025	<0.001	<0.001	<0.1
	1.52	<0.1	2.92	0.155	0.35	<0.1		0.672	0.442	0.354	<0.1	<0.001	0.224
	517	<10	64	<10	113	14		99	61	129	<10	<10	36

Gasworks verification testing

24/09938 /11	24/09938 /12	24/09938 /13	25/00690 /3	25/00690 /4	24/11256 /14	24/09938 /14	24/09938 /15	24/09938 /16	24/11256 /15	24/11256 /16	24/11256 /17	24/10539 /8	24/10539 /9
GWVE-020-B	GWVE-020-C	GWVE-021-A	GWVE-021-B	GWVE-021-C	GWVE-21A-L	GWVE-022-A	GWVE-022-B	GWVE-022-C	GWVE-22A-L	GWVE-22B-L	GWVE-22C-L	GWVE-023-A	GWVE-023-B
11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	24-Jan-25 Soil - ES	24-Jan-25 Soil - ES	14-Nov-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	11-Oct-24 Soil - ES	14-Nov-24 Soil - ES	14-Nov-24 Soil - ES	14-Nov-24 Soil - ES	28-Oct-24 Soil - ES	28-Oct-24 Soil - ES
6.5	3.4		10.8	4.9	1.4				0.9	1	1.4		7.9
0.32	0.21	0.12	0.05	0.28		<0.02	<0.02	0.06				0.16	0.09
0.5	0.82	0.58	0.09	0.52		0.07	0.12	0.16				0.31	0.16
0.99	0.81	0.75	0.15	0.84		0.12	0.17	0.31				0.34	0.24
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				0.004	0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
<0.1	<0.025	<0.1	<0.001	<0.001		<0.025	<0.025	<0.025				<0.001	<0.001
0.38	0.2	<0.1	<0.1	0.18		<0.1	<0.1	<0.1				0.162	<0.1
61	116	53	<10	62		<10	31	<10				115	31

Gasworks verification testing

24/10539/10	24/11256/18	24/10539/11	24/10539/12	24/10539/13	24/11256/19	25/00690/7	25/00690/8	24/11758/10
GWVE-023-C	GWVE-23A-L	GWVE-024A	GWVE-024B	GWVE-024C	GWVE-24C-L	GWVE-025R1-A	GWVE-025R1-B	GWVE-25-C
28-Oct-24 Soil - ES	14-Nov-24 Soil - ES	28-Oct-24 Soil - ES	28-Oct-24 Soil - ES	28-Oct-24 Soil - ES	14-Nov-24 Soil - ES	29-Nov-24 Soil - ES	29-Nov-24 Soil - ES	29-Nov-24 Soil - ES
3.4	3	3.9	3.4		1.9	6	8.6	2.5
0.44		0.04	0.2	0.82		<0.02	0.05	0.24
1.02		0.1	0.36	1.33		<0.04	<0.04	0.23
1.26		0.14	0.59	1.8		<0.08	<0.08	0.5
0.003		<0.001	<0.001	0.001		<0.001	0.142	0.019
0.001		<0.001	<0.001	0.001		<0.001	0.059	0.016
<0.001		<0.001	<0.001	<0.001		<0.001	0.016	0.009
<0.001		<0.001	<0.001	<0.001		<0.001	0.011	0.003
<0.001		<0.001	0.001	<0.001		<0.001	0.008	0.005
0.003		<0.001	0.001	0.002		<0.001	0.045	0.015
<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
1.74		<0.1	<0.1	0.169		<0.1	0.231	1.43
174		14	54	269		<10	19	361

Carriage shed verification testing

Lab Sample ID										24/04408/1	24/04408/2
Client Sample ID										CSVE-001-COMP	CSVE-002-COMP
Date Sampled										30-Apr-24	30-Apr-24
Sample Type	**Units**	**Verification target**	**Limit of detection**	**Method**	**Number of samples**	**Mean**	**Standard deviation**	**95% upper confidence limit**	**Maximum**	Soil - ES	Soil - ES
Anthracene	mg/kg	31	0.02	A-T-019s	36	0.3	0.3	0.4	1.6	0.07	0.11
Benzo(a)pyrene	mg/kg	26	0.04	A-T-019s	36	0.8	0.9	1.0	4.1	0.2	0.32
Fluoranthene	mg/kg	120	0.08	A-T-019s	36	1.7	1.9	2.3	10	0.41	0.7
TPH total (>C6-C40)	mg/kg	1000	10	A-T-007s	36	286.2	275.5	379.4	1020	<10	42
PFOS (s)	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFOA (s)	µg/kg	1	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFPeA	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFHxA (s)	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFHpA (s)	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
6:2 FTSA; 6:2 FTS (s)	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFHxS	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
PFNA (s)	µg/kg	2	1	Subcon Veritas	36	<1.0	N/A	N/A	1	<1.0	<1.0
>C8-C10	mg/kg	153	1	A-T-007s	1	N/A	N/A	N/A	<10		
>C10-C12	mg/kg	76	1	A-T-007s	1	N/A	N/A	N/A	<10		
>C12-C16	mg/kg	208	2	A-T-007s	1	N/A	N/A	N/A	62		
>C16-C21	mg/kg	323	2	A-T-007s	1	N/A	N/A	N/A	233		
>C21-C40	mg/kg	2453	5	A-T-007s	1	N/A	N/A	N/A	731		

Carriage shed verification testing

24/04408/3	24/04670/1	24/04670/2	24/04670/3	24/04670/4	24/04670/5	24/04670/6	24/04670/7	24/04991/1	24/04991/2	24/04991/3	24/04991/4	24/04991/5	24/04991/6
CSVE-003-COMP	CSVE-004-COMP	CSVE-005-COMP	CSVE-006-COMP	CSVE-007-COMP	CSVE-008-COMP	CSVE-009-COMP	CSVE-010-COMP	CSVE-0011-COMP	CSVE-0012-COMP	CSVE-0013-COMP	CSVE-0014-COMP	CSVE-0015-COMP	CSVE-0016-COMP
30-Apr-24	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24	15-May-24	15-May-24	15-May-24	15-May-24	15-May-24	15-May-24
Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
0.58	0.23	<0.02	<0.02	0.1	0.32	0.56	0.56	0.42	<0.02	0.07	<0.02	0.64	<0.02
1.1	0.36	<0.04	<0.04	0.23	0.52	1.57	1.09	1.1	<0.04	0.16	<0.04	2.36	<0.04
3.06	1.14	<0.08	<0.08	0.58	1.06	2.52	2.63	2.18	<0.08	0.33	<0.08	4.02	<0.08
501	14	<10	16	55	253	355	523	344	<10	609	<10	829	<10
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Carriage shed verification testing

24/04991/7 CSVE-0017-COMP 15-May-24 Soil - ES	24/04991/8 CSVE-0018-COMP 15-May-24 Soil - ES	24/04991/9 CSVE-0019-COMP 15-May-24 Soil - ES	24/04991/10 CSVE-0020-COMP 15-May-24 Soil - ES	24/04991/11 CSVE-0021-COMP 15-May-24 Soil - ES	24/05054/1 CSVE-0022-COMP 20-May-24 Soil - ES	24/05054/2 CSVE-0023-COMP 20-May-24 Soil - ES	24/05054/3 CSVE-0024-COMP 20-May-24 Soil - ES	24/05054/4 CSVE-0025-COMP 20-May-24 Soil - ES	24/05054/5 CSVE-0026-COMP 20-May-24 Soil - ES	24/05126/1 CSVE-0027-COMP 21-May-24 Soil - ES	24/05126/2 CSVE-0028-COMP 21-May-24 Soil - ES	24/05126/5 CSVE-0031-COMP 21-May-24 Soil - ES	24/05126/6 CSVE-0032-COMP 21-May-24 Soil - ES
0.03	0.08	0.37	0.46	0.53	<0.02	0.09	<0.02	0.18	0.26	<0.02	0.45	0.22	0.05
0.09	0.13	0.69	1	1.01	0.06	0.22	<0.04	0.47	0.56	<0.04	1.26	0.15	0.13
0.18	0.34	1.21	1.57	2.65	<0.08	0.55	<0.08	1.23	1.66	0.1	2.62	0.72	0.32
<10	17	260	392	483	38	69	<10	213	186	21	254	51	13
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Carriage shed verification testing

24/05842/1	24/05842/2	24/05842/4	24/06239/1	25/05499/1	24/06239/3
CSVE-0033-COMP	CSVE-0034-COMP	CSVE-0036-COMP	CSVE-0037-COMP	CSVE-038R	CSVE-0039-COMP
10-Jun-24	10-Jun-24	10-Jun-24	20-Jun-24	20-May-25	20-Jun-24
Solid	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
1.57	0.43	0.1	0.18	<0.02	0.45
4.08	0.75	0.3	0.13	<0.04	1.08
10	1.91	0.59	0.38	<0.08	2.44
669	1020	390	78	15	591
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	<10				
	<10				
	62				
	233				
	731				

TP422 and TP423 verification testing

Lab Sample ID							24/10539/1	24/10539/2	24/10539/3	24/10539/4	24/10539/5	25/12283/1
Client Sample ID							TP422VE-001	TP422VE-002	TP422VE-003	TP422VE-004	TP422VE-005	TP423V1
Date Sampled							28-Oct-24	28-Oct-24	28-Oct-24	28-Oct-24	28-Oct-24	24-Oct-25
Sample Type	**Units**	**Verification target**	**Limit of detection**	**Number of samples**	**Mean**	**Maximum**	Soil	Soil	Soil	Soil	Soil	Soil
PFPeA	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFHxA (s)	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (s)	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
6:2 FTSA; 6:2 FTS (s)	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (s)	µg/kg	1	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (s)	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFOS (s)	µg/kg	2	1	17	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (s)	µg/kg	2	1	14	<1	<1	<1	<1	<1	<1	<1	-

TP422 and TP423 verification testing

25/12283/2	25/12283/3	24/11256/4	24/11256/5	24/11256/6	24/11256/7	24/11256/8	24/11256/9	24/11256/10	24/11256/11	24/11256/12
TP423V2	TP423V3	TP423VE-004	TP423VE-005	TP423VE-006	TP423VE-007	TP423VE-008	TP423VE-009	TP423VE-010	TP423VE-011	TP423VE-012
24-Oct-25	24-Oct-25	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24
Soil	Soil	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/03989
Issue Number: 1 **Date:** 30 April, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 19/04/24
Date Instructions Received: 22/04/24
Date Analysis Completed: 30/04/24

Approved by:

[redacted]

Amy Riding
Administration Assistant

Envirolab Job Number: 24/03989

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/03989/1	24/03989/2	24/03989/3	24/03989/4	24/03989/5	24/03989/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP700	TP701	TP702	TP703	TP704	TP705				
Depth to Top	1.00	1.00	1.50	1.00	0.80	2.00				
Depth To Bottom										
Date Sampled	18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24	18-Apr-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	4AE	4AB	6AB	4AB	4AB	4AB				
% Stones >10mm$_A$	10.6	19.8	<0.1	6.8	27.7	28.1		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D	<0.2	1.4	<0.2	1.1	<0.2	0.4		mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	2.45	1.02	<0.02	2.83	0.57	0.22		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	18.9	1.18	0.05	7.74	4.14	0.49		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	14.7	3.54	<0.08	14.9	3.68	1.18		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	1680	105	24	1400	609	236		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<25	<25	<1	<25	<1	<1		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	6300	<100	<100	424	181	<100		µg/kg	100	A-T-052s
TPH Banded 1										
>C6-C8$_A$	<5	-	-	<5	-	-		mg/kg	5	A-T-007s
>C8-C10$_A$	3	-	-	2	-	-		mg/kg	1	A-T-007s
>C10-C12$_A$	4	-	-	6	-	-		mg/kg	1	A-T-007s
>C12-C16$_A$	64	-	-	42	-	-		mg/kg	2	A-T-007s
>C16-C21$_A$	296	-	-	187	-	-		mg/kg	2	A-T-007s
>C21-C40$_A$	1310	-	-	1160	-	-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	1680	-	-	1400	-	-		mg/kg	5	A-T-007s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/03989

Date Received: 22/04/2024 (am)

Cool Box Temperatures (°C): 13.7, 13.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/03989/1	24/03989/2	24/03989/3	24/03989/4	24/03989/5	24/03989/6
Client Sample No						
Client Sample ID/Depth	TP700 1.00m	TP701 1.00m	TP702 1.50m	TP703 1.00m	TP704 0.80m	TP705 2.00m
Date Sampled	18/04/24	18/04/24	18/04/24	18/04/24	18/04/24	18/04/24
A-T-006s	26/04/2024	26/04/2024	25/04/2024	26/04/2024	25/04/2024	26/04/2024
A-T-007s	29/04/2024	29/04/2024	29/04/2024	29/04/2024	29/04/2024	29/04/2024
A-T-019s	29/04/2024	29/04/2024	29/04/2024	29/04/2024	29/04/2024	29/04/2024
A-T-033s	30/04/2024	30/04/2024	30/04/2024	30/04/2024	30/04/2024	30/04/2024
A-T-044	26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
A-T-052s	26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/06239
Issue Number: 1 **Date:** 03 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 24/06/24
Date Instructions Received: 24/06/24
Date Analysis Completed: 03/07/24

Approved by:



Amy Riding
Administration Assistant

Envirolab Job Number: 24/06239

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/06239/4	24/06239/5	24/06239/6	[redacted]	Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID		GWVE-001-COMP	GWVE-002-COMP	GWVE-003-COMP				
Depth to Top								
Depth To Bottom								
Date Sampled		20-Jun-24	20-Jun-24	20-Jun-24				
Sample Type		SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code		4A	4A	5A				
% Stones >10mm$_A$		3.8	<0.1	2.6		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D		1.1	0.8	1.7		mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$		<0.02	<0.02	0.03		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		<0.04	0.06	0.16		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		<0.08	0.10	0.26		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		<10	<10	<10		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		<5	<5	<5		µg/kg	1	A-T-006s
PFOS (s)$_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		-	-	-		µg/kg	1	Subcon Veritas
2-Methylnaphthalene$_A$		<100	<100	112		µg/kg	100	A-T-052s
TPH Banded 1								
>C6-C8$_A$		-	-	-		mg/kg	5	A-T-007s
>C8-C10$_A$		-	-	-		mg/kg	1	A-T-007s
>C10-C12$_A$		-	-	-		mg/kg	1	A-T-007s
>C12-C16$_A$		-	-	-		mg/kg	2	A-T-007s
>C16-C21$_A$		-	-	-		mg/kg	2	A-T-007s
>C21-C40$_A$		-	-	-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$		-	-	-		mg/kg	5	A-T-007s

Envirolab Job Number: 24/06239

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						**Units**	**Limit of Detection**	**Method ref**
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
% Stones >10mm$_A$							**% w/w**	**0.1**	A-T-044
Ammoniacal nitrogen as N$_D$							**mg/kg**	**0.2**	A-T-033s
Anthracene$_A^{M\#}$							**mg/kg**	**0.02**	A-T-019s
Benzo(a)pyrene$_A^{M\#}$							**mg/kg**	**0.04**	A-T-019s
Fluoranthene$_A^{M\#}$							**mg/kg**	**0.08**	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$							**mg/kg**	**10**	A-T-007s
Ethylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
o-Xylene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
Isopropylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
n-Propylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
4-Isopropyltoluene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
n-Butylbenzene$_A^{\#}$							**µg/kg**	**1**	A-T-006s
2-Methylnaphthalene$_A$							**µg/kg**	**100**	A-T-052s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/06239

Date Received: 24/06/2024 (pm)

Cool Box Temperatures (°C): 22.5, 23.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/06239/4	24/06239/5	24/06239/6	[redacted]
Client Sample No					
Client Sample ID/Depth		GWVE-001-COMP	GWVE-002-COMP	GWVE-003-COMP	
Date Sampled		20/06/24	20/06/24	20/06/24	
A-T-006s		02/07/2024	02/07/2024	02/07/2024	
A-T-007s		01/07/2024	01/07/2024	01/07/2024	
A-T-019s		02/07/2024	02/07/2024	02/07/2024	
A-T-033s		03/07/2024	03/07/2024	03/07/2024	
A-T-044		02/07/2024	02/07/2024	02/07/2024	
A-T-052s		28/06/2024	28/06/2024	28/06/2024	

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-033s	
A-T-044	
A-T-052s	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/06699
Issue Number: 1 **Date:** 19 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Bridgette Shangase
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 08/07/24
Date Instructions Received: 09/07/24
Date Analysis Completed: 19/07/24

Approved by:

[redacted]

Holly Neary-King
Sales Manager

Lab Sample ID	24/06699/2	24/06699/4	Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-008-COMP	GWVE-0010-COMP			
Depth to Top					
Depth To Bottom					
Date Sampled	03-Jul-24	03-Jul-24			
Sample Type	SOIL - ES	SOIL - ES			
Sample Matrix Code	6A	5AE			
% Moisture at <40C$_A$	-	-	% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	8.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	0.4	0.4	mg/kg	0.2	A-T-033s
Antimony$_D$	-	-	mg/kg	5	A-T-024s
Arsenic$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Barium$_D$	-	-	mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	-	-	mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Lead$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Mercury$_D$	-	-	mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Tin$_D$	-	-	mg/kg	5	A-T-024s
Zinc$_D^{M\#}$	-	-	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.05	0.58	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.18	5.48	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.22	2.03	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	20	1110	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<5	<25	µg/kg	1	A-T-006s
Dieldrin$_A$	-	-	mg/kg	0.01	A-T-056
gamma-Hexachlorocyclohexane (HCH)$_A$	-	-	mg/kg	0.01	A-T-056
Permethrin I (cis)$_A$	-	-	mg/kg	0.01	A-T-056
Permethrin II (trans)$_A$	-	-	mg/kg	0.01	A-T-056
2-Methylnaphthalene$_A$	<100	169	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	µg/kg	100	A-T-052s

Lab Sample ID	24/06699/2	24/06699/4	Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-008-COMP	GWVE-0010-COMP			
Depth to Top					
Depth To Bottom					
Date Sampled	03-Jul-24	03-Jul-24			
Sample Type	SOIL - ES	SOIL - ES			
Sample Matrix Code	6A	5AE			
PAH-16MS					
Acenaphthene$_A^{M\#}$	-	-	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	-	mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	-	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	-	mg/kg	0.04	A-T-019s
Fluorene$_A^{M\#}$	-	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	-	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	-	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	-	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	-	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	-	mg/kg	0.01	A-T-019s
TPH Banded 1					
>C6-C8$_A$	-	419	mg/kg	5	A-T-007s
>C8-C10$_A$	-	5	mg/kg	1	A-T-007s
>C10-C12$_A$	-	9	mg/kg	1	A-T-007s
>C12-C16$_A$	-	66	mg/kg	2	A-T-007s
>C16-C21$_A$	-	171	mg/kg	2	A-T-007s
>C21-C40$_A$	-	431	mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	1100	mg/kg	5	A-T-007s

Envirolab Job Number: 24/06699

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Nickel$_D^{M\#}$		mg/kg	1	A-T-024s
Zinc$_D^{M\#}$		mg/kg	5	A-T-024s

Envirolab Job Number: 24/06699

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]							**Units**	**Limit of Detection**	**Method ref**
Client Sample No										
Client Sample ID										
Depth to Top										
Depth To Bottom										
Date Sampled										
Sample Type										
Sample Matrix Code										
% Stones >10mm$_A$								**% w/w**	**0.1**	A-T-044
Nickel$_D^{M\#}$								**mg/kg**	**1**	A-T-024s
Zinc$_D^{M\#}$								**mg/kg**	**5**	A-T-024s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/06699

Date Received: 09/07/2024 (am)

Cool Box Temperatures (°C): 18.5, 18.2

	[redacted]	
Lab Sample ID		24/06699/4
Client Sample No		
Client Sample ID/Depth		GWVE-0010-COMP
Date Sampled		03/07/24
Deviation Code		
F		✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

	[redacted]	
Lab Sample ID		24/06699/4
Client Sample No		
Client Sample ID/Depth		GWVE-0010-COMP
Date Sampled		03/07/24
TPH Banded 1		✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/06699/2	[redacted]	24/06699/4	[redacted]
Client Sample No					
Client Sample ID/Depth		GWVE-008-COMP		GWVE-0010-COMP	
Date Sampled		03/07/24		03/07/24	
A-T-006s		15/07/2024		15/07/2024	
A-T-007s		18/07/2024		18/07/2024	
A-T-019s		17/07/2024		17/07/2024	
A-T-024s					
A-T-033s		12/07/2024		12/07/2024	
A-T-044		16/07/2024		16/07/2024	
A-T-052s		19/07/2024		19/07/2024	
A-T-056					

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-024s	
A-T-033s	
A-T-044	
A-T-052s	
A-T-056	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/07091
Issue Number: 1 **Date:** 30 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 18/07/24
Date Instructions Received: 19/07/24
Date Analysis Completed: 30/07/24

Approved by:

[redacted]

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/07091

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID		24/07091/2					Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID		GWVE-012-COMP							
Depth to Top									
Depth To Bottom									
Date Sampled		17-Jul-24							
Sample Type		SOIL - ES							
Sample Matrix Code		6ABE							
% Stones >10mm$_A$		<0.1					% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D		1.6					mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$		<0.02					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		<0.08					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		20					mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		<5					µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		<5					µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		<5					µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		<100					µg/kg	100	A-T-052s
TPH Banded 1									
>C6-C8$_A$		-					mg/kg	5	A-T-007s
>C8-C10$_A$		-					mg/kg	1	A-T-007s
>C10-C12$_A$		-					mg/kg	1	A-T-007s
>C12-C16$_A$		-					mg/kg	2	A-T-007s
>C16-C21$_A$		-					mg/kg	2	A-T-007s
>C21-C40$_A$		-					mg/kg	5	A-T-007s
Total TPH Banded 1$_A$		-					mg/kg	5	A-T-007s

Report Notes

General

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•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/07091

Date Received: 19/07/2024 (am)

Cool Box Temperatures (°C): 19.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/07091/2	[redacted]
Client Sample No			
Client Sample ID/Depth		GWVE-012-COMP	
Date Sampled		17/07/24	
A-T-006s		26/07/2024	
A-T-007s		24/07/2024	
A-T-019s		24/07/2024	
A-T-033s		25/07/2024	
A-T-044		26/07/2024	
A-T-052s		30/07/2024	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/07603
Issue Number: 1 **Date:** 12 August, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 02/08/24
Date Instructions Received: 05/08/24
Date Analysis Completed: 12/08/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/07603

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07603/1		24/07603/3		24/07603/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-005-R		GWVE-006-R		GWVE-009-R					
Depth to Top	0.50		0.50		0.50					
Depth To Bottom										
Date Sampled	01-Aug-24		01-Aug-24		01-Aug-24					
Sample Type	SOIL - ES		SOIL - ES		SOIL - ES					
Sample Matrix Code	5A		1		5					
% Stones >10mm$_A$	2.6		<0.1		<0.1			% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	5.0		0.7		2.4			mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.07		<0.02		0.05			mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.18		<0.04		0.10			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.32		<0.08		0.13			mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	65		13		51			mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1		<1		<1			µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100		<100		<100			µg/kg	100	A-T-052s

Report Notes

General

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•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
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•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
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Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
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All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/07603

Date Received: 05/08/2024 (am)

Cool Box Temperatures (°C): 22.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/07603/1	[redacted]	24/07603/3	[redacted]	24/07603/5	[redacted]
Client Sample No						
Client Sample ID/Depth	GWVE-005-R 0.50m		GWVE-006-R 0.50m		GWVE-009-R 0.50m	
Date Sampled	01/08/24		01/08/24		01/08/24	
A-T-006s	08/08/2024		08/08/2024		08/08/2024	
A-T-007s	07/08/2024		07/08/2024		07/08/2024	
A-T-019s	06/08/2024		06/08/2024		06/08/2024	
A-T-033s	09/08/2024		09/08/2024		09/08/2024	
A-T-044	08/08/2024		08/08/2024		08/08/2024	
A-T-052s	07/08/2024		07/08/2024		07/08/2024	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/07788
Issue Number: 1 **Date:** 20 August, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: TRUtesting
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 08/08/24
Date Instructions Received: 09/08/24
Date Analysis Completed: 20/08/24

Approved by:

[redacted]

Richard Wong
Client Manager

Envirolab Job Number: 24/07788

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07788/1		Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-007-R-E				
Depth to Top	1.00				
Depth To Bottom					
Date Sampled	07-Aug-24				
Sample Type	SOIL - ES				
Sample Matrix Code	4A				
% Stones >10mm$_A$	<0.1		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D	2.8		mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.11		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.26		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.36		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	42		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100		µg/kg	100	A-T-052s

Envirolab Job Number: 24/07788

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07788/1	[redacted]	Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-007-R-E				
Depth to Top	1.00				
Depth To Bottom					
Date Sampled	07-Aug-24				
Sample Type	SOIL - ES				
Sample Matrix Code	4A				
TPH Banded 1					
>C6-C8$_A$	-		mg/kg	5	A-T-007s
>C8-C10$_A$	-		mg/kg	1	A-T-007s
>C10-C12$_A$	-		mg/kg	1	A-T-007s
>C12-C16$_A$	-		mg/kg	2	A-T-007s
>C16-C21$_A$	-		mg/kg	2	A-T-007s
>C21-C40$_A$	-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-		mg/kg	5	A-T-007s

Envirolab Job Number: 24/07788

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
Hazardous Waste Assessment									Assessment
% Moisture at <40C$_A$							% w/w	0.1	A-T-044
% Stones >10mm$_A$							% w/w	0.1	A-T-044
pH$_D^{M\#}$							pH	0.01	A-T-031s
Arsenic$_D^{M\#}$							mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$							mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$							mg/kg	1	A-T-024s
Chromium$_D^{M\#}$							mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$							mg/kg	1	A-T-040s
Lead$_D^{M\#}$							mg/kg	1	A-T-024s
Mercury$_D$							mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$							mg/kg	1	A-T-024s
Selenium$_D^{M\#}$							mg/kg	1	A-T-024s
Zinc$_D^{M\#}$							mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$							mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$							mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$							mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$							mg/kg	10	A-T-007s

Envirolab Job Number: 24/07788

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

	[redacted]						Units	Limit of Detection	Method ref
Lab Sample ID									
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
Asbestos in Soil (inc. matrix) ^									
Asbestos in soil$_{D}^{\#}$									A-T-045
Asbestos Matrix (visual)$_{D}$									A-T-045
Asbestos Matrix (microscope)$_{D}$									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$									A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)									
Asbestos in soil % composition (hand picking and weighing)$_{D}$							% w/w	0.001	A-T-054

Envirolab Job Number: 24/07788

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						**Units**	**Limit of Detection**	**Method ref**
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
PAH-16MS									
Acenaphthene$_{A}^{M\#}$							**mg/kg**	**0.01**	A-T-019s
Acenaphthylene$_{A}^{M\#}$							**mg/kg**	**0.01**	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$							**mg/kg**	**0.04**	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$							**mg/kg**	**0.05**	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$							**mg/kg**	**0.05**	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$							**mg/kg**	**0.07**	A-T-019s
Chrysene$_{A}^{M\#}$							**mg/kg**	**0.06**	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$							**mg/kg**	**0.04**	A-T-019s
Fluorene$_{A}^{M\#}$							**mg/kg**	**0.01**	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$							**mg/kg**	**0.03**	A-T-019s
Naphthalene $_{A}^{M\#}$							**mg/kg**	**0.03**	A-T-019s
Phenanthrene$_{A}^{M\#}$							**mg/kg**	**0.03**	A-T-019s
Pyrene$_{A}^{M\#}$							**mg/kg**	**0.07**	A-T-019s
Total PAH-16MS$_{A}^{M\#}$							**mg/kg**	**0.01**	A-T-019s
TPH Total with ID + GC Trace									
TPH FID Chromatogram$_{A}$									A-T-007s
TPH ID Interpretation$_{A}$									A-T-007s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/07788

Date Received: 09/08/2024 (am)

Cool Box Temperatures (°C): 19.8-20.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/07788/1
Client Sample No	
Client Sample ID/Depth	GWVE-007-R-E 1.00m
Date Sampled	07/08/24
A-T-004s	
A-T-006s	12/08/2024
A-T-007s	13/08/2024
A-T-019s	13/08/2024
A-T-022s	
A-T-024s	
A-T-025w	
A-T-026w	
A-T-026w (F)	
A-T-030s	
A-T-031s	
A-T-031w	
A-T-032s	
A-T-032w	
A-T-033s	13/08/2024
A-T-037w	
A-T-040s	
A-T-044	13/08/2024
A-T-045	
A-T-050w	
A-T-052s	13/08/2024
A-T-054	
A-T-ANCs	
Assessment	
Calc	
Calc-no stones	
Probe (w)	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/07878
Issue Number: 1 **Date:** 20 August, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 09/08/24
Date Instructions Received: 13/08/24
Date Analysis Completed: 20/08/24

Approved by:

[redacted]

Richard Wong
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 24/07878

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07878/1	24/07878/2	24/07878/3	24/07878/4	[redacted]	24/07878/7	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	GWVE-007-R-C1	GWVE-007-R-C2	GWVE-007-R-C3	GWVE-007-R-C4		GWVE-007-R-C5C			
Depth to Top	0.5	0.50	0.50	1.80		3.40			
Depth To Bottom									
Date Sampled	08-Aug-24	08-Aug-24	08-Aug-24	08-Aug-24		08-Aug-24			
Sample Type	SOIL	SOIL	SOIL	SOIL		SOIL			
Sample Matrix Code	4AB	5AB	6AE	6AB		6A			
% Stones >10mm$_A$	<0.1	2.7	<0.1	<0.1		<0.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	0.5	3.2	1.6	1.8		2.2	mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.30	<0.02	<0.02	0.09		0.27	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	1.03	0.07	<0.04	0.70		0.10	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.68	<0.08	<0.08	0.51		0.16	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	450	206	<10	16		659	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<1	<1	<1	<5		2	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1	<1	<1	<5		<1	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100	<100	<100	<100		<100	µg/kg	100	A-T-052s

Envirolab Job Number: 24/07878

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07878/1	24/07878/2	24/07878/3	24/07878/4	[redacted]	24/07878/7	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	GWVE-007-R-C1	GWVE-007-R-C2	GWVE-007-R-C3	GWVE-007-R-C4		GWVE-007-R-C5C			
Depth to Top	0.5	0.50	0.50	1.80		3.40			
Depth To Bottom									
Date Sampled	08-Aug-24	08-Aug-24	08-Aug-24	08-Aug-24		08-Aug-24			
Sample Type	SOIL	SOIL	SOIL	SOIL		SOIL			
Sample Matrix Code	4AB	5AB	6AE	6AB		6A			
TPH Banded 1									
>C6-C8$_A$	-	-	-	-		-	mg/kg	5	A-T-007s
>C8-C10$_A$	-	-	-	-		-	mg/kg	1	A-T-007s
>C10-C12$_A$	-	-	-	-		-	mg/kg	1	A-T-007s
>C12-C16$_A$	-	-	-	-		-	mg/kg	2	A-T-007s
>C16-C21$_A$	-	-	-	-		-	mg/kg	2	A-T-007s
>C21-C40$_A$	-	-	-	-		-	mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	-	-	-		-	mg/kg	5	A-T-007s

Envirolab Job Number: 24/07878

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07878/9	24/07878/11	Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-007-R-S1B	GWVE-007-R-S2B			
Depth to Top	3.00	2.00			
Depth To Bottom					
Date Sampled	08-Aug-24	08-Aug-24			
Sample Type	SOIL	SOIL			
Sample Matrix Code	6A	6A			
Hazardous Waste Assessment	-	-			Assessment
% Moisture at <40C$_A$	-	-	% w/w	0.1	A-T-044
% Stones >10mm$_A$	6.0	2.2	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	2.4	2.3	mg/kg	0.2	A-T-033s
Arsenic$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	-	-	mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	-	mg/kg	1	A-T-040s
Lead$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Mercury$_D$	-	-	mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	-	-	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	-	-	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.09	0.06	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.10	0.07	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.14	<0.08	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	62	959	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<5	<1	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 24/07878

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/07878/9	24/07878/11	Units	Limit of Detection	Method ref
Client Sample No					
Client Sample ID	GWVE-007-R-S1B	GWVE-007-R-S2B			
Depth to Top	3.00	2.00			
Depth To Bottom					
Date Sampled	08-Aug-24	08-Aug-24			
Sample Type	SOIL	SOIL			
Sample Matrix Code	6A	6A			
Asbestos in Soil (inc. matrix) ^					
Asbestos in soil$_{D}^{\#}$	-	-			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-	-			A-T-045

Lab Sample ID	[redacted]	24/07878/9	[redacted]	24/07878/11	[redacted]	Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID		GWVE-007-R-S1B		GWVE-007-R-S2B				
Depth to Top		3.00		2.00				
Depth To Bottom								
Date Sampled		08-Aug-24		08-Aug-24				
Sample Type		SOIL		SOIL				
Sample Matrix Code		6A		6A				
PAH-16MS								
Acenaphthene$_A$ M#		-		-		mg/kg	0.01	A-T-019s
Acenaphthylene$_A$ M#		-		-		mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A$ M#		-		-		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A$ M#		-		-		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A$ M#		-		-		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A$ M#		-		-		mg/kg	0.07	A-T-019s
Chrysene$_A$ M#		-		-		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$ M#		-		-		mg/kg	0.04	A-T-019s
Fluorene$_A$ M#		-		-		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A$ M#		-		-		mg/kg	0.03	A-T-019s
Naphthalene $_A$ M#		-		-		mg/kg	0.03	A-T-019s
Phenanthrene$_A$ M#		-		-		mg/kg	0.03	A-T-019s
Pyrene$_A$ M#		-		-		mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$ M#		-		-		mg/kg	0.01	A-T-019s
TPH Banded 1								
>C6-C8$_A$		-		-		mg/kg	5	A-T-007s
>C8-C10$_A$		-		-		mg/kg	1	A-T-007s
>C10-C12$_A$		-		-		mg/kg	1	A-T-007s
>C12-C16$_A$		-		-		mg/kg	2	A-T-007s
>C16-C21$_A$		-		-		mg/kg	2	A-T-007s
>C21-C40$_A$		-		-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$		-		-		mg/kg	5	A-T-007s
TPH Total with ID + GC Trace								
TPH FID Chromatogram$_A$		-		-				A-T-007s
TPH ID Interpretation$_A$		-		-				A-T-007s

Envirolab Job Number: 24/07878

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/07878/16						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID		GWVE-007-R-S3D								
Depth to Top		3.00								
Depth To Bottom										
Date Sampled		08-Aug-24								
Sample Type		SOIL								
Sample Matrix Code		6A								
% Stones >10mm$_A$		0.9						% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D		2.0						mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$		0.38						mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		0.09						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		0.18						mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		257						mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		<25						µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		<25						µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		<25						µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		<25						µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		<25						µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		84						µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		<25						µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		<25						µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		<100						µg/kg	100	A-T-052s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/07878

Date Received: 13/08/2024 (am)

Cool Box Temperatures (°C): 18.8-22-.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/07878/1	24/07878/2	24/07878/3	24/07878/4	[redacted]	24/07878/7	[redacted]
Client Sample No							
Client Sample ID/Depth	GWVE-007-R-C1 0.5m	GWVE-007-R-C2 0.50m	GWVE-007-R-C3 0.50m	GWVE-007-R-C4 1.80m		GWVE-007-R-C5C 3.40m	
Date Sampled	08/08/24	08/08/24	08/08/24	08/08/24		08/08/24	
A-T-004s							
A-T-006s	16/08/2024	16/08/2024	16/08/2024	16/08/2024		16/08/2024	
A-T-007s	16/08/2024	16/08/2024	16/08/2024	16/08/2024		16/08/2024	
A-T-019s	16/08/2024	16/08/2024	16/08/2024	16/08/2024		16/08/2024	
A-T-022s							
A-T-024s							
A-T-025w							
A-T-026w							
A-T-026w (F)							
A-T-030s							
A-T-031s							
A-T-031w							
A-T-032s							
A-T-032w							
A-T-033s	14/08/2024	14/08/2024	14/08/2024	14/08/2024		14/08/2024	
A-T-037w							
A-T-040s							
A-T-044	15/08/2024	15/08/2024	15/08/2024	15/08/2024		15/08/2024	
A-T-045							
A-T-050w							
A-T-052s	16/08/2024	16/08/2024	16/08/2024	16/08/2024		16/08/2024	
A-T-ANCs							
Assessment							
Calc							
Calc-no stones							
Probe (w)							

Lab Sample ID	24/07878/9	[redacted]	24/07878/11	[redacted]	24/07878/16
Client Sample No					
Client Sample ID/Depth	GWVE-007-R-S1B 3.00m		GWVE-007-R-S2B 2.00m		GWVE-007-R-S3D 3.00m
Date Sampled	08/08/24		08/08/24		08/08/24
A-T-004s					
A-T-006s	16/08/2024		16/08/2024		16/08/2024
A-T-007s	16/08/2024		15/08/2024		15/08/2024
A-T-019s	16/08/2024		16/08/2024		16/08/2024
A-T-022s					
A-T-024s					
A-T-025w					
A-T-026w					
A-T-026w (F)					
A-T-030s					
A-T-031s					
A-T-031w					
A-T-032s					
A-T-032w					
A-T-033s	14/08/2024		14/08/2024		14/08/2024
A-T-037w					
A-T-040s					
A-T-044	15/08/2024		15/08/2024		15/08/2024
A-T-045					
A-T-050w					
A-T-052s	16/08/2024		16/08/2024		16/08/2024
A-T-ANCs					
Assessment					
Calc					
Calc-no stones					
Probe (w)					

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08495
Issue Number: 1 **Date:** 09 September, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Franck Baudrain/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 02/09/24
Date Instructions Received: 03/09/24
Date Analysis Completed: 09/09/24

Approved by:

[redacted]

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/08495

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/08495/1		24/08495/4	24/08495/5		Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID	GWVE-014-COMP-R		GWVE-013-COMP-R	GWVE-015-COMP-R				
Depth to Top	0.50		1.0	0.5				
Depth To Bottom								
Date Sampled	30-Aug-24		30-Aug-24	30-Aug-24				
Sample Type	SOIL - ES		SOIL - ES	SOIL - ES				
Sample Matrix Code	5A		5A	5A				
% Stones >10mm$_A$	<0.1		<0.1	<0.1		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	2.2		4.6	2.9		mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	<0.02		3.56	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.06		2.43	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08		6.05	<0.08		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	18		442	<10		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1		<25	<1		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100		192	<100		µg/kg	100	A-T-052s
TPH Banded 1								
>C6-C8$_A$	-		-	-		mg/kg	5	A-T-007s
>C8-C10$_A$	-		-	-		mg/kg	1	A-T-007s
>C10-C12$_A$	-		-	-		mg/kg	1	A-T-007s
>C12-C16$_A$	-		-	-		mg/kg	2	A-T-007s
>C16-C21$_A$	-		-	-		mg/kg	2	A-T-007s
>C21-C40$_A$	-		-	-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-		-	-		mg/kg	5	A-T-007s

Envirolab Job Number: 24/08495

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]					Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID								
Depth to Top								
Depth To Bottom								
Date Sampled								
Sample Type								
Sample Matrix Code								
% Stones >10mm$_A$						% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D						mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$						mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$						mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$						mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$						µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$						µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$						µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$						µg/kg	100	A-T-052s
TPH Banded 1								
>C6-C8$_A$						mg/kg	5	A-T-007s
>C8-C10$_A$						mg/kg	1	A-T-007s
>C10-C12$_A$						mg/kg	1	A-T-007s
>C12-C16$_A$						mg/kg	2	A-T-007s
>C16-C21$_A$						mg/kg	2	A-T-007s
>C21-C40$_A$						mg/kg	5	A-T-007s
Total TPH Banded 1$_A$						mg/kg	5	A-T-007s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/08495

Date Received: 03/09/2024 (am)

Cool Box Temperatures (°C): 14.0-14.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08495/1	[redacted]	24/08495/4	24/08495/5	[redacted]
Client Sample No					
Client Sample ID/Depth	GWVE-014-COMP-R 0.50m		GWVE-013-COMP-R 1.0m	GWVE-015-COMP-R 0.5m	
Date Sampled	30/08/24		30/08/24	30/08/24	
A-T-006s	05/09/2024		09/09/2024	05/09/2024	
A-T-007s	05/09/2024		05/09/2024	05/09/2024	
A-T-019s	05/09/2024		05/09/2024	05/09/2024	
A-T-033s	05/09/2024		05/09/2024	05/09/2024	
A-T-044	06/09/2024		06/09/2024	06/09/2024	
A-T-052s	09/09/2024		09/09/2024	09/09/2024	

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-033s	
A-T-044	
A-T-052s	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/08724
Issue Number: 1 **Date:** 17 September, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Franck Baudrain/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 10/09/24
Date Instructions Received: 10/09/24
Date Analysis Completed: 17/09/24

Approved by:

[redacted]

Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/08724/1		24/08724/3		24/08724/5		Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	GWVE-07R-N 1		GWVE-07R-N 2		GWVE-07R-N 3				
Depth to Top	1.50		1.50		1.50				
Depth To Bottom									
Date Sampled	06-Sep-24		06-Sep-24		06-Sep-24				
Sample Type	SOIL - ES		SOIL - ES		SOIL - ES				
Sample Matrix Code	6A		6A		6A				
% Stones >10mm$_A$	<0.1		<0.1		2.9		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	1.7		1.8		1.6		mg/kg	0.2	A-T-033s
Nickel$_D^{M\#}$	-		-		-		mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	-		-		-		mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	0.07		0.04		0.02		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.51		<0.04		<0.04		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.36		<0.08		<0.08		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	<10		18		<10		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<25		10		<25		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<25		7		<25		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<25		6		<25		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<25		7		<25		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<25		10		<25		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<25		47		<25		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<25		<5		<25		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<25		<5		<25		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100		962		<100		µg/kg	100	A-T-052s
PFOS (s)$_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	-		-		-		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]				Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID							
Depth to Top							
Depth To Bottom							
Date Sampled							
Sample Type							
Sample Matrix Code							
% Stones >10mm$_A$					% w/w	0.1	A-T-044
Nickel$_D^{M\#}$					mg/kg	1	A-T-024s
Zinc$_D^{M\#}$					mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$					mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$					µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$					µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$					µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$					µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$					µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$					µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$					µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/08724

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						
Client Sample No							
Client Sample ID							
Depth to Top							
Depth To Bottom							
Date Sampled							
Sample Type							
Sample Matrix Code							
TPH CWG with Clean Up							
Ali >C5-C6$_A$					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$					mg/kg	1	A-T-055s
Total Aliphatics$_A$					mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$					mg/kg	1	A-T-055s
Aro >C10-C12$_A$					mg/kg	1	A-T-055s
Aro >C12-C16$_A$					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$					mg/kg	1	A-T-055s
Total Aromatics$_A$					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$					mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$					mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/08724

Date Received: 10/09/2024 (am)

Cool Box Temperatures (°C): 17.6, 17.4, 17.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/08724/1	[redacted]	24/08724/3	[redacted]	24/08724/5	[redacted]
Client Sample No						
Client Sample ID/Depth	GWVE-07R-N1 1.50m		GWVE-07R-N2 1.50m		GWVE-07R-N3 1.50m	
Date Sampled	06/09/24		06/09/24		06/09/24	
A-T-006s	13/09/2024		13/09/2024		13/09/2024	
A-T-007s	12/09/2024		12/09/2024		12/09/2024	
A-T-019s	12/09/2024		12/09/2024		12/09/2024	
A-T-022s						
A-T-024s						
A-T-033s	11/09/2024		11/09/2024		11/09/2024	
A-T-044	12/09/2024		12/09/2024		12/09/2024	
A-T-052s	12/09/2024		12/09/2024		12/09/2024	
A-T-055s						
Calc-As Recd						

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-022s	
A-T-024s	
A-T-033s	
A-T-044	
A-T-052s	
A-T-055s	
Calc-As Recd	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09693
Issue Number: 1 **Date:** 14 October, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell/TRUtesting
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 07/10/24
Date Instructions Received: 08/10/24
Date Analysis Completed: 14/10/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09693

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/09693/1	24/09693/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-016-COMP	GWVE-04A-COMP								
Depth to Top	0.00	0.00								
Depth To Bottom										
Date Sampled	04-Oct-24	04-Oct-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	5AB	4A								
% Stones >10mm$_A$	<0.1	2.6						% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D	0.8	3.8						mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.31	0.18						mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.54	0.31						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.05	0.66						mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	66	66						mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1	<1						µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1	<1						µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1^U	<1^U						µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1	<1						µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1	<1						µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	6	<1						µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1^U	<1^U						µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1	<1						µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100	<100						µg/kg	100	A-T-052s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/09693

Date Received: 08/10/2024 (am)

Cool Box Temperatures (°C): 16.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09693/1	24/09693/2
Client Sample No		
Client Sample ID/Depth	GWVE-016-COMP 0.00m	GWVE-04A-COMP 0.00m
Date Sampled	04/10/24	04/10/24
A-T-006s	10/10/2024	10/10/2024
A-T-007s	09/10/2024	09/10/2024
A-T-019s	14/10/2024	14/10/2024
A-T-033s	11/10/2024	11/10/2024
A-T-044	11/10/2024	11/10/2024
A-T-052s	11/10/2024	11/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09938
Issue Number: 1 **Date:** 23 October, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 14/10/24
Date Instructions Received: 15/10/24
Date Analysis Completed: 23/10/24

Approved by:

[redacted]

Richard Wong
Client Manager

Envirolab Job Number: 24/09938

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/09938/1	24/09938/2	24/09938/3	24/09938/4	24/09938/5	24/09938/6	24/09938/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-017-A	GWVE-017-B	GWVE-017-C	GWVE-018-A	GWVE-018-B	GWVE-018-C	GWVE-019-A			
Depth to Top	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Depth To Bottom										
Date Sampled	11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	SOIL - ES			
Sample Matrix Code	5A	3	3A	3A	5A	7	5A			
% Stones >10mm$_A$	<0.1	2.7	3.4	<0.1	3.5	<0.1	<0.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	2.9	11.3	11.1	12.9	8.9	14.8	5.8	mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	2.04	<0.02	0.24	0.08	0.88	0.09^U	0.31	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	4.10	0.08	0.36	0.11	1.32	0.16^U	0.39	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	5.25	<0.08	0.46	0.16	1.94	0.29^U	0.45	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	517	<10	64	<10	113	14^U	99	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	22	<5	<5	<5	<5	<5^U	<5	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	28	<5	<5	<5	<5	<5^U	<5	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<5	<5	<5	<5	<5	<5^U	<5	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<5	<5	<5	<5	<5	<5^U	<5	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	14	<5	<5	<5	<5	<5^U	14	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	35	<5	<5	<5	<5	<5^U	13	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<5	<5	<5	<5	<5	<5^U	7	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<5	<5	<5	<5	<5	<5^U	<5	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	1520	<100	2920	155	350	<100	672	µg/kg	100	A-T-052s

Envirolab Job Number: 24/09938

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/09938/8		24/09938/10	24/09938/11	24/09938/12	24/09938/13	24/09938/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-019-B		GWVE-020-A	GWVE-020-B	GWVE-020-C	GWVE-021-A	GWVE-022-A			
Depth to Top	0.00		0.00	0.00	0.00	0.00	0.00			
Depth To Bottom										
Date Sampled	11-Oct-24		11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24	11-Oct-24			
Sample Type	SOIL - ES		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3A		5A	5A	5A	5A	3			
% Stones >10mm$_A$	2.3		<0.1	<0.1	1.1	1.7	5.6	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	18.3		7.8	6.5	3.4	4.8	6.6	mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.47		0.14	0.32	0.21	0.12	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.84		0.37	0.50	0.82	0.58	0.07	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.08		0.47	0.99	0.81	0.75	0.12	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	61		36	61	116	53	<10	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<5		<1^U	<1^U	<25	<1^U	<25	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<5		<1	1	<25	<1	<25	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<5		<1	<1	<25	<1	<25	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	442		224	380	200	<100	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 24/09938

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/09938/15	24/09938/16						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-022-B	GWVE-022-C								
Depth to Top	0.00	0.00								
Depth To Bottom										
Date Sampled	11-Oct-24	11-Oct-24								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	5A	3A								
% Stones >10mm$_A$	<0.1	<0.1						% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	9.0	5.9						mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	<0.02	0.06						mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.12	0.16						mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.17	0.31						mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	31	<10						mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<25	<25						µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	<100	<100						µg/kg	100	A-T-052s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/09938

Date Received: 15/10/2024 (am)

Cool Box Temperatures (°C): 13.2-13.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09938/1	24/09938/2	24/09938/3	24/09938/4	24/09938/5	24/09938/6	24/09938/7	24/09938/8	[redacted]	24/09938/10	24/09938/11
Client Sample No											
Client Sample ID/Depth	GWVE-017-A 0.00m	GWVE-017-B 0.00m	GWVE-017-C 0.00m	GWVE-018-A 0.00m	GWVE-018-B 0.00m	GWVE-018-C 0.00m	GWVE-019-A 0.00m	GWVE-019-B 0.00m		GWVE-020-A 0.00m	GWVE-020-B 0.00m
Date Sampled	11/10/24	11/10/24	11/10/24	11/10/24	11/10/24	11/10/24	11/10/24	11/10/24		11/10/24	11/10/24
A-T-006s	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024		17/10/2024	17/10/2024
A-T-007s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024		17/10/2024	17/10/2024
A-T-019s	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024		23/10/2024	23/10/2024
A-T-033s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024		17/10/2024	17/10/2024
A-T-044	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024		17/10/2024	17/10/2024
A-T-052s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024		17/10/2024	17/10/2024

Lab Sample ID	24/09938/12	24/09938/13	24/09938/14	24/09938/15	24/09938/16
Client Sample No					
Client Sample ID/Depth	GWVE-020-C 0.00m	GWVE-021-A 0.00m	GWVE-022-A 0.00m	GWVE-022-B 0.00m	GWVE-022-C 0.00m
Date Sampled	11/10/24	11/10/24	11/10/24	11/10/24	11/10/24
A-T-006s	21/10/2024	17/10/2024	21/10/2024	21/10/2024	21/10/2024
A-T-007s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024
A-T-019s	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
A-T-033s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024
A-T-044	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024
A-T-052s	17/10/2024	17/10/2024	17/10/2024	17/10/2024	17/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/10539/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 24/10539
Issue Number: 2 **Date:** 18 November, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: TRUtesting
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 29/10/24
Date Instructions Received: 30/10/24
Date Analysis Completed: 18/11/24

Approved by:

Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/10539

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		mg/kg	0.2	A-T-033s
Ammonia / Ammoniacal Nitrogen as NH3$_D$		mg/kg	0.24	A-T-033s
PFPeA$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/10539

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/10539/8	24/10539/9	24/10539/10	24/10539/11	24/10539/12	24/10539/13		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-023-A	GWVE-023-B	GWVE-023-C	GWVE-024-A	GWVE-024-B	GWVE-024-C				
Depth to Top										
Depth To Bottom										
Date Sampled	28-Oct-24	28-Oct-24	28-Oct-24	28-Oct-24	28-Oct-24	28-Oct-24				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6A	6A	3A	6A	3A	3A				
% Stones >10mm$_A$	1.3	1.6	3.5	<0.1	8.6	7.2		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	3.1	7.9	3.4	3.9	3.4	3.7		mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.16	0.09	0.44	0.04	0.20	0.82		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.31	0.16	1.02	0.10	0.36	1.33		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.34	0.24	1.26	0.14	0.59	1.80		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	115	31	174	14	54	269		mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	1	<1	3	<1	<1	1		µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	<1	<1	1	<1	<1	1		µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	<1	<1	<1	<1	<1	<1		µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	<1	<1	<1	<1	<1	<1		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	<1	<1	<1	<1	<1	<1		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	4	1	3	<1	1	2		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1	<1	<1	<1	<1	<1		µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1	<1	<1	<1	<1	<1		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	162	<100	1740	<100	<100	169		µg/kg	100	A-T-052s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/10539

Date Received: 30/10/2024 (am)

Cool Box Temperatures (°C): 15.1, 14.8

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/10539/8	24/10539/9	24/10539/10
Client Sample No				
Client Sample ID/Depth		GWVE-023-A	GWVE-023-B	GWVE-023-C
Date Sampled		28/10/24	28/10/24	28/10/24
A-T-006s		01/11/2024	01/11/2024	01/11/2024
A-T-007s		01/11/2024	01/11/2024	01/11/2024
A-T-019s		04/11/2024	04/11/2024	04/11/2024
A-T-033s		01/11/2024	01/11/2024	01/11/2024
A-T-044		04/11/2024	04/11/2024	04/11/2024
A-T-052s		04/11/2024	04/11/2024	04/11/2024

Lab Sample ID	24/10539/11	24/10539/12	24/10539/13
Client Sample No			
Client Sample ID/Depth	GWVE-024-A	GWVE-024-B	GWVE-024-C
Date Sampled	28/10/24	28/10/24	28/10/24
A-T-006s	01/11/2024	01/11/2024	01/11/2024
A-T-007s	01/11/2024	01/11/2024	01/11/2024
A-T-019s	04/11/2024	04/11/2024	04/11/2024
A-T-033s	01/11/2024	01/11/2024	01/11/2024
A-T-044	04/11/2024	04/11/2024	04/11/2024
A-T-052s	04/11/2024	04/11/2024	04/11/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/11256/2

Amendments: Re-issue following query/investigation

Envirolab Job Number: 24/11256
Issue Number: 3 **Date:** 29 November, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Bridgette Shangase/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 18/11/24
Date Instructions Received: 19/11/24
Date Analysis Completed: 29/11/24

Approved by:

Richard Wong
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	Units	Limit of Detection	Method ref
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
PFPeA$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$		µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/11256/13	24/11256/14	Units	Limit of Detection	Method ref
Client Sample No						
Client Sample ID		GWVE-18B-L	GWVE-21A-L			
Depth to Top		0.00	0.00			
Depth To Bottom						
Date Sampled		14-Nov-24	14-Nov-24			
Sample Type		SOIL - ES	SOIL - ES			
Sample Matrix Code		6A	6A			
% Stones >10mm$_A$		<0.1	<0.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		3.3	1.4	mg/kg	0.2	A-T-033s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_A$		*	*			A-T-001
Ammoniacal nitrogen as N (leachable)$_A$		0.38	0.29	mg/l	0.05	A-T-033w
PFPeA$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$		-	-	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/11256/15	24/11256/16	24/11256/17	24/11256/18	24/11256/19	24/11256/20	24/11256/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	GWVE-22A-L	GWVE-22B-L	GWVE-22C-L	GWVE-23A-L	GWVE-24C-L	GW16L-01	GW16L-02			
Depth to Top	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Depth To Bottom										
Date Sampled	14-Nov-24	14-Nov-24	14-Nov-24	14-Nov-24	14-Nov-24	14-Nov-24	14-Nov-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	6	6A	6A	6A	6	6	6A			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N_D	0.9	1.0	1.4	3.0	1.9	1.8	2.2	mg/kg	0.2	A-T-033s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_A$	*	*	*	*	*	*	*			A-T-001
Ammoniacal nitrogen as N (leachable)$_A$	<0.05	<0.05	0.07	0.10	0.10	<0.05	0.16	mg/l	0.05	A-T-033w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/11256

Date Received: 19/11/2024 (am)

Cool Box Temperatures (°C): 4.4 - 5.0

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/11256/1	24/11256/2	24/11256/3	24/11256/4	24/11256/5	24/11256/6	24/11256/7	24/112		24/11256/10
Client Sample No										
Client Sample ID/Depth	TP423VE-001 0.00m	TP423VE-002 0.00m	TP423VE-003 0.00m	TP423VE-004 0.00m	TP423VE-005 0.00m	TP423VE-006 0.00m	TP423VE-007 0.00m	TP423VE-008 0.00m	TP423VE-009 0.00m	TP423VE-010 0.00m
Date Sampled	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24
A-T-033s										
A-T-033w										
A-T-044										

Lab Sample ID	24/11256/11	24/11256/12	24/11256/13	24/11256/14	24/11256/15	24/11256/16	24/11256/17	24/11256/18	24/11256/19	24/11256/20	24/11256/21
Client Sample No											
Client Sample ID/Depth	TP423VE-011 0.00m	TP423VE-012 0.00m	GWVE-18B-L 0.00m	GWVE-21A-L 0.00m	GWVE-22A-L 0.00m	GWVE-22B-L 0.00m	GWVE-22C-L 0.00m	GWVE-23A-L 0.00m	GWVE-24C-L 0.00m	GW16L-01 0.00m	GW16L-02 0.00m
Date Sampled	15/11/24	15/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24
A-T-033s			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
A-T-033w			22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
A-T-044			22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/11758
Issue Number: 1 **Date:** 16 December, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: BAM RW/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 02/12/24
Date Instructions Received: 03/12/24
Date Analysis Completed: 16/12/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/11758

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/11758/2	24/11758/3	24/11758/4	24/11758/5	Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	GWVE-11R-A	GWVE-11R-B	GWVE-11R-C	GWVE-19R-A			
Depth to Top	0.00	0.00	0.00	0.00			
Depth To Bottom							
Date Sampled	29-Nov-24	29-Nov-24	29-Nov-24	29-Nov-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4ABE	4ABE	5A	5A			
Hazardous Waste Assessment	-	-	-	-			Assessment
% Moisture at <40C$_A$	-	-	-	-	% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	1.6	<0.1	<0.1	% w/w	0.1	A-T-044
pH$_D^{M\#}$	-	-	-	-	pH	0.01	A-T-031s
Ammoniacal nitrogen as N$_D$	1.3	1.2	1.1	2.8	mg/kg	0.2	A-T-033s
Arsenic$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	-	-	-	-	mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	-	-	-	mg/kg	1	A-T-040s
Lead$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Mercury$_D$	-	-	-	-	mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	-	-	-	-	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	-	-	-	-	mg/kg	5	A-T-024s
Anthracene$_A^{M\#}$	1.50	0.13	1.28	1.14	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	6.70	0.56	2.31	1.76	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.80	0.98	6.16	2.79	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	690	64	159	129	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	<1	<1	<1	36	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	22	2	<1	<25	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	1	<1	<1	<25	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	5	<1	<1	<25	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	28	<1	<1	36	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	37	1	<1	66	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	<1	<1	<1	<25	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	<1	<1	<1	<25	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	256	<100	<100	354	µg/kg	100	A-T-052s

Envirolab Job Number: 24/11758

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/11758/2	24/11758/3	24/11758/4	24/11758/5	[redacted]	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID		GWVE-11R-A	GWVE-11R-B	GWVE-11R-C	GWVE-19R-A				
Depth to Top		0.00	0.00	0.00	0.00				
Depth To Bottom									
Date Sampled		29-Nov-24	29-Nov-24	29-Nov-24	29-Nov-24				
Sample Type		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code		4ABE	4ABE	5A	5A				
Asbestos in Soil (inc. matrix) ^									
Asbestos in soil$_{D}^{\#}$		-	-	-	-				A-T-045
Asbestos Matrix (visual)$_{D}$		-	-	-	-				A-T-045
Asbestos Matrix (microscope)$_{D}$		-	-	-	-				A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$		-	-	-	-				A-T-045

Envirolab Job Number: 24/11758

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/11758/2	24/11758/3	24/11758/4	24/11758/5	Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	GWVE-11R-A	GWVE-11R-B	GWVE-11R-C	GWVE-19R-A			
Depth to Top	0.00	0.00	0.00	0.00			
Depth To Bottom							
Date Sampled	29-Nov-24	29-Nov-24	29-Nov-24	29-Nov-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4ABE	4ABE	5A	5A			
PAH-16MS							
Acenaphthene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.01	A-T-019s
Acenaphthylene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.07	A-T-019s
Chrysene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.04	A-T-019s
Fluorene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.03	A-T-019s
Naphthalene $_{A}^{M\#}$	-	-	-	-	mg/kg	0.03	A-T-019s
Phenanthrene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.03	A-T-019s
Pyrene$_{A}^{M\#}$	-	-	-	-	mg/kg	0.07	A-T-019s
Total PAH-16MS$_{A}^{M\#}$	-	-	-	-	mg/kg	0.01	A-T-019s
TPH Total with ID + GC Trace							
TPH FID Chromatogram$_{A}$	-	-	-	-			A-T-007s
TPH ID Interpretation$_{A}$	-	-	-	-			A-T-007s

Envirolab Job Number: 24/11758

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/11758/10	[redacted]				Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID		GWVE-25-C							
Depth to Top		0.00							
Depth To Bottom									
Date Sampled		29-Nov-24							
Sample Type		SOIL - ES							
Sample Matrix Code		5AC							
% Stones >10mm$_A$		<0.1					% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		2.5					mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$		0.24					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		0.23					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		0.50					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		361					mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		19					µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		16					µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		9					µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		3					µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		5					µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		15					µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		<1					µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		<1					µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		1430					µg/kg	100	A-T-052s

Envirolab Job Number: 24/11758

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	**24/11758/10**	[redacted]				**Units**	**Limit of Detection**	**Method ref**
Client Sample No									
Client Sample ID		**GWVE-25-C**							
Depth to Top		**0.00**							
Depth To Bottom									
Date Sampled		**29-Nov-24**							
Sample Type		**SOIL - ES**							
Sample Matrix Code		**5AC**							
Product (Oil) TPH Total with ID									
Product (Oil) TPH total (>C6-C40)$_A$		**-**					**mg/kg**	**2500**	**A-T-007s**
Product (Oil) ID (FID characterisation)$_A$		**-**							**A-T-007w**

Report Notes

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•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/11758

Date Received: 03/12/2024 (am)

Cool Box Temperatures (°C): 8.8-9.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	24/11758/2	24/11758/3	24/11758/4	24/11758/5	[redacted]	24/11758/10	[redacted]
Client Sample No								
Client Sample ID/Depth		GWVE-11R-A 0.00m	GWVE-11R-B 0.00m	GWVE-11R-C 0.00m	GWVE-19R-A 0.00m		GWVE-25-C 0.00m	
Date Sampled		29/11/24	29/11/24	29/11/24	29/11/24		29/11/24	
A-T-004s								
A-T-006s		05/12/2024	05/12/2024	05/12/2024	11/12/2024		05/12/2024	
A-T-007s		06/12/2024	06/12/2024	06/12/2024	06/12/2024		06/12/2024	
A-T-007w								
A-T-019s		12/12/2024	11/12/2024	11/12/2024	11/12/2024		11/12/2024	
A-T-022s								
A-T-024s								
A-T-025w								
A-T-026w								
A-T-026w (F)								
A-T-030s								
A-T-031s								
A-T-031w								
A-T-032s								
A-T-032w								
A-T-033s		06/12/2024	06/12/2024	06/12/2024	06/12/2024		06/12/2024	
A-T-037w								
A-T-040s								
A-T-044		04/12/2024	04/12/2024	04/12/2024	04/12/2024		04/12/2024	
A-T-045								
A-T-050w								
A-T-052s		09/12/2024	09/12/2024	09/12/2024	09/12/2024		09/12/2024	
A-T-ANCs								
Assessment								
Calc								
Calc-no stones								
Probe (w)								

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/00690
Issue Number: 1 **Date:** 19 February, 2025

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: BAM RW
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 27/01/25
Date Instructions Received: 28/01/25
Date Analysis Completed: 19/02/25

Approved by:

[redacted]

Gemma Berrisford
Deputy Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID		25/00690/3	25/00690/4		25/00690/7	Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID		GWVE-021B	GWVE-021C		GWVE-025R1-A			
Depth to Top		0	0		0.5			
Depth To Bottom								
Date Sampled		24-Jan-25	24-Jan-25		24-Jan-25			
Sample Type		SOIL - ES	SOIL - ES		SOIL - ES			
Sample Matrix Code		3A	6A		6AB			
% Stones >10mm$_A$		<0.1	<0.1		<0.1	% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		10.8	4.9		6.0	mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$		0.05	0.28		<0.02	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$		0.09	0.52		<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$		0.15	0.84		<0.08	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$		<10	62		<10	mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$		<1	<1		<1	µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$		<100	180		<100	µg/kg	100	A-T-052s

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	25/00690/8	25/00690/9	25/00690/10	[redacted]	Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	GWVE-025R1-B	GWVE-019R2-B	GWVE-019R2-C				
Depth to Top	0.5	0.5	0.5				
Depth To Bottom							
Date Sampled	24-Jan-25	24-Jan-25	24-Jan-25				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	3A	5A	5A				
Hazardous Waste Assessment	-	-	-				Assessment
% Moisture at <40C$_A$	-	-	-		% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH$_D$[M#]	-	-	-		pH	0.01	A-T-031s
Ammoniacal nitrogen as N$_D$	8.6	8.9	4.7		mg/kg	0.2	A-T-033s
Arsenic$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Cadmium$_D$[M#]	-	-	-		mg/kg	0.5	A-T-024s
Copper$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Chromium$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	-	-		mg/kg	1	A-T-040s
Lead$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Mercury$_D$	-	-	-		mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Selenium$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Zinc$_D$[M#]	-	-	-		mg/kg	1	A-T-024s
Anthracene$_A$[M#]	0.05	<0.02	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A$[M#]	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene$_A$[M#]	<0.08	0.12	<0.08		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A$[M#]	19	<10	<10		mg/kg	10	A-T-007s
Ethylbenzene$_A$[#]	142	<1	<1		µg/kg	1	A-T-006s
o-Xylene$_A$[#]	59	1	<1		µg/kg	1	A-T-006s
Isopropylbenzene$_A$[#]	16	<1	<1		µg/kg	1	A-T-006s
n-Propylbenzene$_A$[#]	11	<1	<1		µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A$[#]	8	1	<1		µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A$[#]	45	4	<1		µg/kg	1	A-T-006s
4-Isopropyltoluene$_A$[#]	<1	<1	<1		µg/kg	1	A-T-006s
n-Butylbenzene$_A$[#]	<1	<1	<1		µg/kg	1	A-T-006s
2-Methylnaphthalene$_A$	231	<100	<100		µg/kg	100	A-T-052s

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	25/00690/8	25/00690/9	25/00690/10	[redacted]	Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	GWVE-025R1-B	GWVE-019R2-B	GWVE-019R2-C				
Depth to Top	0.5	0.5	0.5				
Depth To Bottom							
Date Sampled	24-Jan-25	24-Jan-25	24-Jan-25				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	3A	5A	5A				
Asbestos in Soil (inc. matrix) ^							
Asbestos in soil$_{D}^{\#}$	-	-	-				A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-				A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-				A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	-	-	-				A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)							
Asbestos in soil % composition (hand picking and weighing)$_{D}$	-	-	-		% w/w	0.001	A-T-054

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	25/00690/8	25/00690/9	25/00690/10	[redacted]	Units	Limit of Detection	Method ref
Client Sample No							
Client Sample ID	GWVE-025R1-B	GWVE-019R2-B	GWVE-019R2-C				
Depth to Top	0.5	0.5	0.5				
Depth To Bottom							
Date Sampled	24-Jan-25	24-Jan-25	24-Jan-25				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	3A	5A	5A				
PAH-16MS							
Acenaphthene$_A^{M\#}$	-	-	-		mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	-	-		mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	-	-		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	-	-		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	-	-		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	-	-		mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	-	-		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	-	-		mg/kg	0.04	A-T-019s
Fluorene$_A^{M\#}$	-	-	-		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	-	-		mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	-	-		mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	-	-		mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	-	-		mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	-	-		mg/kg	0.01	A-T-019s
TPH Total with ID + GC Trace							
TPH FID Chromatogram$_A$	-	-	-				A-T-007s
TPH ID Interpretation$_A$	-	-	-				A-T-007s

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						**Units**	**Limit of Detection**	**Method ref**
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
Hazardous Waste Assessment									Assessment
% Moisture at <40C$_A$							**% w/w**	**0.1**	A-T-044
% Stones >10mm$_A$							**% w/w**	**0.1**	A-T-044
pH$_D$$^{M\#}$							**pH**	**0.01**	A-T-031s
Arsenic$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Cadmium$_D$$^{M\#}$							**mg/kg**	**0.5**	A-T-024s
Copper$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Chromium$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Chromium (hexavalent)$_D$							**mg/kg**	**1**	A-T-040s
Lead$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Mercury$_D$							**mg/kg**	**0.17**	A-T-024s
Nickel$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Selenium$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Zinc$_D$$^{M\#}$							**mg/kg**	**1**	A-T-024s
Anthracene$_A$$^{M\#}$							**mg/kg**	**0.02**	A-T-019s
Benzo(a)pyrene$_A$$^{M\#}$							**mg/kg**	**0.04**	A-T-019s
Fluoranthene$_A$$^{M\#}$							**mg/kg**	**0.08**	A-T-019s
TPH total (>C6-C40)$_A$$^{M\#}$							**mg/kg**	**10**	A-T-007s

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]						**Units**	**Limit of Detection**	**Method ref**
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
Asbestos in Soil (inc. matrix) ^									
Asbestos in soil$_{D}^{\#}$									A-T-045
Asbestos Matrix (visual)$_{D}$									A-T-045
Asbestos Matrix (microscope)$_{D}$									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$									A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)									
Asbestos in soil % composition (hand picking and weighing)$_{D}$							**% w/w**	**0.001**	A-T-054

Envirolab Job Number: 25/00690

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

							Units	Limit of Detection	Method ref
Lab Sample ID	[redacted]								
Client Sample No									
Client Sample ID									
Depth to Top									
Depth To Bottom									
Date Sampled									
Sample Type									
Sample Matrix Code									
PAH-16MS									
Acenaphthene$_A^{M\#}$							mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$							mg/kg	0.01	A-T-019s
Benzo(a)anthracene$_A^{M\#}$							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$							mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$							mg/kg	0.04	A-T-019s
Fluorene$_A^{M\#}$							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$							mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$							mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$							mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$							mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$							mg/kg	0.01	A-T-019s
TPH Total with ID + GC Trace									
TPH FID Chromatogram$_A$									A-T-007s
TPH ID Interpretation$_A$									A-T-007s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 25/00690

Date Received: 28/01/2025 (am)

Cool Box Temperatures (°C): 7.4, 7.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	[redacted]	25/00690/3	25/00690/4	[redacted]	25/00690/7	25/00690/8	25/00690/9
Client Sample No							
Client Sample ID/Depth		GWVE-021B 0m	GWVE-021C 0m		GWVE-025R1-A 0.5m	GWVE-025R1-B 0.5m	GWVE-019R2-B 0.5m
Date Sampled		24/01/25	24/01/25		24/01/25	24/01/25	24/01/25
A-T-004s							
A-T-006s		03/02/2025	03/02/2025		03/02/2025	03/02/2025	30/01/2025
A-T-007s		31/01/2025	31/01/2025		31/01/2025	31/01/2025	31/01/2025
A-T-019s		05/02/2025	05/02/2025		05/02/2025	05/02/2025	05/02/2025
A-T-022s							
A-T-024s							
A-T-025w							
A-T-026w							
A-T-026w (F)							
A-T-030s							
A-T-031s							
A-T-031w							
A-T-032s							
A-T-032w							
A-T-033s		31/01/2025	31/01/2025		31/01/2025	31/01/2025	31/01/2025
A-T-037w							
A-T-040s							
A-T-044		30/01/2025	30/01/2025		30/01/2025	30/01/2025	30/01/2025
A-T-045							
A-T-050w							
A-T-052s		03/02/2025	03/02/2025		03/02/2025	03/02/2025	03/02/2025
A-T-054							
A-T-ANCs							
Assessment							
Calc							
Calc-no stones							
Probe (w)							

Lab Sample ID	25/00690/10	[redacted]
Client Sample No		
Client Sample ID/Depth	GWVE-019R2-C 0.5m	
Date Sampled	24/01/25	
A-T-004s		
A-T-006s	03/02/2025	
A-T-007s	31/01/2025	
A-T-019s	05/02/2025	
A-T-022s		
A-T-024s		
A-T-025w		
A-T-026w		
A-T-026w (F)		
A-T-030s		
A-T-031s		
A-T-031w		
A-T-032s		
A-T-032w		
A-T-033s	31/01/2025	
A-T-037w		
A-T-040s		
A-T-044	30/01/2025	
A-T-045		
A-T-050w		
A-T-052s	03/02/2025	
A-T-054		
A-T-ANCs		
Assessment		
Calc		
Calc-no stones		
Probe (w)		

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/04408
Issue Number: 1 **Date:** 16 May, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Alex Pearce/Bridgette Shangase/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 01/05/24
Date Instructions Received: 02/05/24
Date Analysis Completed: 16/05/24

Approved by:

[redacted]

Sophie France
Client Manager

Envirolab Job Number: 24/04408

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/04408/1	24/04408/2	24/04408/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-001-COMP	CSVE-002-COMP	CSVE-003-COMP							
Depth to Top										
Depth To Bottom										
Date Sampled	30-Apr-24	30-Apr-24	30-Apr-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	4A	5A							
% Stones >10mm$_{A}$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
Anthracene$_{A}^{M\#}$	0.07	0.11	0.58					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	0.20	0.32	1.10					mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	0.41	0.70	3.06					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	<10	42	501					mg/kg	10	A-T-007s
PFOS (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	<1.00	<1.00	<1.00					µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/04408

Date Received: 02/05/2024 (am)

Cool Box Temperatures (°C): 15.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/04408/1	24/04408/2	24/04408/3
Client Sample No			
Client Sample ID/Depth	CSVE-001-COMP	CSVE-002-COMP	CSVE-003-COMP
Date Sampled	30/04/24	30/04/24	30/04/24
A-T-007s	13/05/2024	13/05/2024	13/05/2024
A-T-019s	13/05/2024	13/05/2024	13/05/2024
A-T-044	14/05/2024	14/05/2024	14/05/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/04670
Issue Number: 1 **Date:** 23 May, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Alex Pearce/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT 323649488
Date Samples Received: 09/05/24
Date Instructions Received: 10/05/24
Date Analysis Completed: 23/05/24

Approved by:

[redacted]
Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/04670

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/04670/1	24/04670/2	24/04670/3	24/04670/4	24/04670/5	24/04670/6	24/04670/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-004-COMP	CSVE-005-COMP	CSVE-006-COMP	CSVE-007-COMP	CSVE-008-COMP	CSVE-009-COMP	CSVE-010-COMP			
Depth to Top										
Depth To Bottom										
Date Sampled	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24	08-May-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	4A	4A	6A	4A	4A	4A			
% Stones >10mm$_A$	0.6	<0.1	6.1	1.7	7.3	8.8	3.7	% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	0.23	<0.02	<0.02	0.10	0.32	0.56	0.56	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.36	<0.04	<0.04	0.23	0.52	1.57	1.09	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.14	<0.08	<0.08	0.58	1.06	2.52	2.63	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	14	<10	16	55	253	355	523	mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/04670

Date Received: 10/05/2024 (am)

Cool Box Temperatures (°C): 17.6

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/04670/1	24/04670/2	24/04670/3	24/04670/4	24/04670/5	24/04670/6	24/04670/7
Client Sample No							
Client Sample ID/Depth	CSVE-004-COMP	CSVE-005-COMP	CSVE-006-COMP	CSVE-007-COMP	CSVE-008-COMP	CSVE-009-COMP	CSVE-010-COMP
Date Sampled	08/05/24	08/05/24	08/05/24	08/05/24	08/05/24	08/05/24	08/05/24
A-T-007s	14/05/2024	14/05/2024	14/05/2024	14/05/2024	14/05/2024	14/05/2024	14/05/2024
A-T-019s	15/05/2024	15/05/2024	15/05/2024	15/05/2024	15/05/2024	15/05/2024	15/05/2024
A-T-044	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/04991
Issue Number: 1 **Date:** 03 June, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: TRUtesting
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT 323649448
Date Samples Received: 17/05/24
Date Instructions Received: 20/05/24
Date Analysis Completed: 03/06/24

Approved by:

[redacted]

Amy Riding
Administration Assistant

Envirolab Job Number: 24/04991

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/04991/1	24/04991/2	24/04991/3	24/04991/4	24/04991/5	24/04991/6	24/04991/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-0011-COMP	CSVE-0012-COMP	CSVE-0013-COMP	CSVE-0014-COMP	CSVE-0015-COMP	CSVE-0016-COMP	CSVE-0017-COMP			
Depth to Top										
Depth To Bottom										
Date Sampled	15-May-24	15-May-24	15-May-24	15-May-24	15-May-24	15-May-24	15-May-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4A	5	4A	4A	4AE	4A	6A			
% Stones >10mm$_{A}$	30.2	<0.1	7.3	<0.1	15.5	<0.1	4.0	% w/w	0.1	A-T-044
Anthracene$_{A}^{M\#}$	0.42	<0.02	0.07	<0.02	0.64	<0.02	0.03	mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_{A}^{M\#}$	1.10	<0.04	0.16	<0.04	2.36	<0.04	0.09	mg/kg	0.04	A-T-019s
Fluoranthene$_{A}^{M\#}$	2.18	<0.08	0.33	<0.08	4.02	<0.08	0.18	mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_{A}^{M\#}$	344	<10	609	<10	829	<10	<10	mg/kg	10	A-T-007s
PFOS (s)$_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFOA (s)$_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFPeA$_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFHxA (s) $_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFHpA (s) $_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFHxS$_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas
PFNA (s)$_{A}^{\#}$	1	1	1	1	1	1	1	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/04991

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/04991/8	24/04991/9	24/04991/10	24/04991/11				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-0018-COMP	CSVE-0019-COMP	CSVE-0020-COMP	CSVE-0021-COMP						
Depth to Top										
Depth To Bottom										
Date Sampled	15-May-24	15-May-24	15-May-24	15-May-24						
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES						
Sample Matrix Code	4A	4A	4A	4A						
% Stones >10mm$_A$	<0.1	23.5	3.5	23.2				% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	0.08	0.37	0.46	0.53				mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.13	0.69	1.00	1.01				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.34	1.21	1.57	2.65				mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	17	260	392	483				mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	1	1	1	1				µg/kg	1	Subcon Veritas

Report Notes

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The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/04991

Date Received: 20/05/2024 (am)

Cool Box Temperatures (°C): 20.4, 19.1, 18.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/04991/1	24/04991/2	24/04991/3	24/04991/4	24/04991/5	24/04991/6	24/04991/7
Client Sample No							
Client Sample ID/Depth	CSVE-0011-COMP	CSVE-0012-COMP	CSVE-0013-COMP	CSVE-0014-COMP	CSVE-0015-COMP	CSVE-0016-COMP	CSVE-0017-COMP
Date Sampled	15/05/24	15/05/24	15/05/24	15/05/24	15/05/24	15/05/24	15/05/24
A-T-007s	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024
A-T-019s	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024	24/05/2024
A-T-044	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024

Lab Sample ID	24/04991/8	24/04991/9	24/04991/10	24/04991/11
Client Sample No				
Client Sample ID/Depth	CSVE-0018-COMP	CSVE-0019-COMP	CSVE-0020-COMP	CSVE-0021-COMP
Date Sampled	15/05/24	15/05/24	15/05/24	15/05/24
A-T-007s	24/05/2024	24/05/2024	24/05/2024	24/05/2024
A-T-019s	24/05/2024	24/05/2024	24/05/2024	24/05/2024
A-T-044	29/05/2024	29/05/2024	29/05/2024	29/05/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/05054
Issue Number: 1 **Date:** 03 June, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Alex Pearce/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT 323649448
Date Samples Received: 21/05/24
Date Instructions Received: 22/05/24
Date Analysis Completed: 03/06/24

Approved by:

[redacted]
Amy Riding
Administration Assistant

Envirolab Job Number: 24/05054

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/05054/1	24/05054/2	24/05054/3	24/05054/4	24/05054/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-0022-COMP	CSVE-0023-COMP	CSVE-0024-COMP	CSVE-0025-COMP	CSVE-0026-COMP					
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-24	20-May-24	20-May-24	20-May-24	20-May-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	4A	6A	6A	4A	4A					
% Stones >10mm$_A$	8.0	<0.1	10.1	<0.1	12.7			% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	<0.02	0.09	<0.02	0.18	0.26			mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.06	0.22	<0.04	0.47	0.56			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.55	<0.08	1.23	1.66			mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	38	69	<10	213	186			mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	1	1	1	1	1			µg/kg	1	Subcon Veritas

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/05054

Date Received: 22/05/2024 (am)

Cool Box Temperatures (°C): 15.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/05054/1	24/05054/2	24/05054/3	24/05054/4	24/05054/5
Client Sample No					
Client Sample ID/Depth	CSVE-0022-COMP	CSVE-0023-COMP	CSVE-0024-COMP	CSVE-0025-COMP	CSVE-0026-COMP
Date Sampled	20/05/24	20/05/24	20/05/24	20/05/24	20/05/24
A-T-007s	28/05/2024	28/05/2024	28/05/2024	28/05/2024	28/05/2024
A-T-019s	28/05/2024	28/05/2024	28/05/2024	28/05/2024	28/05/2024
A-T-044	30/05/2024	30/05/2024	30/05/2024	30/05/2024	30/05/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/05126
Issue Number: 1 **Date:** 06 June, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT 323649448
Date Samples Received: 22/05/24
Date Instructions Received: 23/05/24
Date Analysis Completed: 06/06/24

Approved by:

[redacted]

Amy Riding
Administration Assistant

Envirolab Job Number: 24/05126

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/05126/1	24/05126/2	[redacted]	24/05126/5	24/05126/6		Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	CSVE-0027-COMP	CSVE-0028-COMP		CSVE-0031-COMP	CSVE-0032-COMP				
Depth to Top									
Depth To Bottom									
Date Sampled	21-May-24	21-May-24		21-May-24	21-May-24				
Sample Type	SOIL - ES	SOIL - ES		SOIL - ES	SOIL - ES				
Sample Matrix Code	6A	4AB		6A	6A				
% Stones >10mm$_A$	18.8	19.7		<0.1	11.4		% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	<0.02	0.45		0.22	0.05		mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	1.26		0.15	0.13		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.10	2.62		0.72	0.32		mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	21	254		51	13		mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	<1.00	<1.00		<1.00	<1.00		µg/kg	1	Subcon Veritas
TPH Banded 1									
>C6-C8$_A$	-	-		-	-		mg/kg	5	A-T-007s
>C8-C10$_A$	-	-		-	-		mg/kg	1	A-T-007s
>C10-C12$_A$	-	-		-	-		mg/kg	1	A-T-007s
>C12-C16$_A$	-	-		-	-		mg/kg	2	A-T-007s
>C16-C21$_A$	-	-		-	-		mg/kg	2	A-T-007s
>C21-C40$_A$	-	-		-	-		mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	-		-	-		mg/kg	5	A-T-007s

Report Notes

General
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The results reported herein relate only to the material supplied to the laboratory.
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Analytical results reflect the quality of the sample at the time of analysis only.
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Key

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IS	Insufficient Sample for analysis
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NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/05126

Date Received: 23/05/2024 (am)

Cool Box Temperatures (°C): 14.2 - 14.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/05126/1	24/05126/2	[redacted]	24/05126/5	24/05126/6
Client Sample No					
Client Sample ID/Depth	CSVE-0027-COMP	CSVE-0028-COMP		CSVE-0031-COMP	CSVE-0032-COMP
Date Sampled	21/05/24	21/05/24		21/05/24	21/05/24
A-T-007s	31/05/2024	31/05/2024		31/05/2024	31/05/2024
A-T-019s	31/05/2024	31/05/2024		31/05/2024	31/05/2024
A-T-044	03/06/2024	03/06/2024		03/06/2024	03/06/2024

The above dates are the analysis completion dates, plea [redacted] ily the date that the analysis was weighed/extracted.

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/05842/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 24/05842
Issue Number: 2 **Date:** 20 August, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT 323649448
Date Samples Received: 11/06/24
Date Instructions Received: 12/06/24
Date Analysis Completed: 20/08/24

Approved by:

[redacted]
Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/05842

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/05842/1	24/05842/2		24/05842/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-0033-COMP	CSVE-0034-COMP		CSVE-0036-COMP						
Depth to Top										
Depth To Bottom										
Date Sampled	10-Jun-24	10-Jun-24		10-Jun-24						
Sample Type	SOLID	SOIL - ES		SOIL - ES						
Sample Matrix Code	7	4AE		5A						
% Stones >10mm$_A$	<0.1	29.0		5.9				% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	1.57^U	0.43		0.10				mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	4.08^U	0.75		0.30				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	10^U	1.91		0.59				mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	669^U	1020		390				mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	1^U	1		1				µg/kg	1	Subcon Veritas
TPH Banded 1										
>C6-C8$_A$	-	<50		-				mg/kg	5	A-T-007s
>C6-C8$_A^{M\#}$	-	-		-				mg/kg	5	A-T-007s
>C8-C10$_A$	-	<10		-				mg/kg	1	A-T-007s
>C8-C10$_A^{M\#}$	-	-		-				mg/kg	1	A-T-007s
>C10-C12$_A$	-	<10		-				mg/kg	1	A-T-007s
>C10-C12$_A^{M\#}$	-	-		-				mg/kg	1	A-T-007s
>C12-C16$_A$	-	62		-				mg/kg	2	A-T-007s
>C12-C16$_A^{M\#}$	-	-		-				mg/kg	2	A-T-007s
>C16-C21$_A$	-	233		-				mg/kg	2	A-T-007s
>C16-C21$_A^{M\#}$	-	-		-				mg/kg	2	A-T-007s
>C21-C40$_A$	-	731		-				mg/kg	5	A-T-007s
>C21-C40$_A^{M\#}$	-	-		-				mg/kg	5	A-T-007s
Total TPH Banded 1$_A^{M\#}$	-	1030		-				mg/kg	5	A-T-007s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/05842

Date Received: 12/06/2024 (am)

Cool Box Temperatures (°C): 15.3

	[redacted]
Lab Sample ID	
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
Deviation Code	
F	

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EX

	[redacted]
Lab Sample ID	
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
TPH Banded 1	

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/05842/1	24/05842/2	[redacted]	24/05842/4
Client Sample No				
Client Sample ID/Depth	CSVE-0033-COMP	CSVE-0034-COMP		CSVE-0036-COMP
Date Sampled	10/06/24	10/06/24		10/06/24
A-T-007s	19/06/2024	19/06/2024		19/06/2024
A-T-019s	18/06/2024	19/06/2024		18/06/2024
A-T-044	20/06/2024	20/06/2024		20/06/2024

The above dates are the analysis completion dates, plea [redacted] are not necessarily the date that the analysis was weighed/extracted.

nd of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/06239
Issue Number: 1 **Date:** 03 July, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 24/06/24
Date Instructions Received: 24/06/24
Date Analysis Completed: 03/07/24

Approved by:

[redacted]
Amy Riding
Administration Assistant

Envirolab Job Number: 24/06239

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/06239/1		24/06239/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	CSVE-0037-COMP		CSVE-0039-COMP							
Depth to Top										
Depth To Bottom										
Date Sampled	20-Jun-24		20-Jun-24							
Sample Type	SOIL - ES		SOIL - ES							
Sample Matrix Code	5A		4AB							
% Stones >10mm$_A$	3.1		17.4					% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	-		-					mg/kg	0.2	A-T-033s
Anthracene$_A^{M\#}$	0.18		0.45					mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.13		1.08					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.38		2.44					mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	78		591					mg/kg	10	A-T-007s
Ethylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
o-Xylene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
Isopropylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
n-Propylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
n-Butylbenzene$_A^{\#}$	-		-					µg/kg	1	A-T-006s
PFOS (s)$_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	Appended		Appended					µg/kg	1	Subcon Veritas
2-Methylnaphthalene$_A$	-		-					µg/kg	100	A-T-052s
TPH Banded 1										
>C6-C8$_A$	-		-					mg/kg	5	A-T-007s
>C8-C10$_A$	-		-					mg/kg	1	A-T-007s
>C10-C12$_A$	-		-					mg/kg	1	A-T-007s
>C12-C16$_A$	-		-					mg/kg	2	A-T-007s
>C16-C21$_A$	-		-					mg/kg	2	A-T-007s
>C21-C40$_A$	-	2520	-	-	-	-	-	mg/kg	5	A-T-007s
Total TPH Banded 1$_A$	-	2630	-	-	-	-	-	mg/kg	5	A-T-007s

Envirolab Job Number: 24/06239

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]								**Units**	**Limit of Detection**	**Method ref**
Client Sample No											
Client Sample ID											
Depth to Top											
Depth To Bottom											
Date Sampled											
Sample Type											
Sample Matrix Code											
% Stones >10mm$_A$									**% w/w**	**0.1**	A-T-044
Ammoniacal nitrogen as N$_D$									**mg/kg**	**0.2**	A-T-033s
Anthracene$_A^{M\#}$									**mg/kg**	**0.02**	A-T-019s
Benzo(a)pyrene$_A^{M\#}$									**mg/kg**	**0.04**	A-T-019s
Fluoranthene$_A^{M\#}$									**mg/kg**	**0.08**	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$									**mg/kg**	**10**	A-T-007s
Ethylbenzene$_A^{\#}$									**µg/kg**	**1**	A-T-006s
o-Xylene$_A^{\#}$									**µg/kg**	**1**	A-T-006s
Isopropylbenzene$_A^{\#}$									**µg/kg**	**1**	A-T-006s
n-Propylbenzene$_A^{\#}$									**µg/kg**	**1**	A-T-006s
1,3,5-Trimethylbenzene$_A^{\#}$	**<5**	**<5**							**µg/kg**	**1**	A-T-006s
1,2,4-Trimethylbenzene$_A^{\#}$	**<5**	**<5**							**µg/kg**	**1**	A-T-006s
4-Isopropyltoluene$_A^{\#}$	**<5**	**<5**							**µg/kg**	**1**	A-T-006s
n-Butylbenzene$_A^{\#}$	**<5**	**<5**							**µg/kg**	**1**	A-T-006s
2-Methylnaphthalene$_A$	**<100**	**<100**							**µg/kg**	**100**	A-T-052s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/06239

Date Received: 24/06/2024 (pm)

Cool Box Temperatures (°C): 22.5, 23.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/06239/1	[redacted]	24/06239/3	[redacted]
Client Sample No				
Client Sample ID/Depth	CSVE-0037-COMP		CSVE-0039-COMP	
Date Sampled	20/06/24		20/06/24	
A-T-006s				
A-T-007s	01/07/2024		01/07/2024	
A-T-019s	02/07/2024		02/07/2024	
A-T-033s				
A-T-044	02/07/2024		02/07/2024	
A-T-052s				

Lab Sample ID	[redacted]
Client Sample No	
Client Sample ID/Depth	
Date Sampled	
A-T-006s	
A-T-007s	
A-T-019s	
A-T-033s	
A-T-044	
A-T-052s	

The above dates are th[redacted]tion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

TEST REPORT

Report Number: 2024-1321

Customer Name :	Envirolab Ltd
Customer Address :	Housesteads Off Stockport Road Hattersley, SK14 3QU
Order Number :	P0754496
Project Reference:	331B
Issue :	0
Date of Receipt :	26/06/24
Date of Analysis :	01/07/24
Date of Report :	03/07/24
Sample Type :	Soil
Customer Sample Identifier :	24/06239/1
Sample Condition :	Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-1321
Customer Sample Identifier : 24/06239/1
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-1323

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0754496
Project Reference: 331B
Issue : 0
Date of Receipt : 26/06/24
Date of Analysis : 01/07/24
Date of Report : 03/07/24
Sample Type : Soil
Customer Sample Identifier : 24/06239/3
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Veritas Laboratory Services Ltd
Shepherds Road, Bartley, Southampton, SO40 2LH

Results PFAS

Sample Type : Soil
Test Report Number : 2024-1323
Customer Sample Identifier : 24/06239/3
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA	335-67-1	1	µg/kg	ND
PFOS	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/05499
Issue Number: 1 **Date:** 10 June, 2025

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Bridgette Shangase
Project Name: Victoria North Permanent Water Treatment Plant
Project Ref: RGN.331B
Order No: RIT323649448
Date Samples Received: 27/05/25
Date Instructions Received: 27/05/25
Date Analysis Completed: 09/06/25

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 25/05499

Client Project Name: Victoria North Permanent Water Treatment Plant

Client Project Ref: RGN.331B

Lab Sample ID	25/05499/1							Units	Limit of Detection	Method ref
Client Sample No	1									
Client Sample ID	CSVE-038R									
Depth to Top	1.80									
Depth To Bottom										
Date Sampled	20-May-25									
Sample Type	SOIL - ES									
Sample Matrix Code	6A									
% Stones >10mm$_A$	<0.1							% w/w	0.1	A-T-044
Anthracene$_A^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08							mg/kg	0.08	A-T-019s
TPH total (>C6-C40)$_A^{M\#}$	15							mg/kg	10	A-T-007s
PFOS (s)$_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFPeA$_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	Appended							µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	Appended							µg/kg	1	Subcon Veritas

Report Notes

General
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•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
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•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos
Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Permanent Water Treatment Plant

Clients Project No: RGN.331B

Project No: 25/05499

Date Received: 27/05/2025 (am)

Cool Box Temperatures (°C): 13.5

Lab Sample ID	25/05499/1
Client Sample No	1
Client Sample ID/Depth	CSVE-038R 1.80m
Date Sampled	20/05/25
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	25/05499/1
Client Sample No	1
Client Sample ID/Depth	CSVE-038R 1.80m
Date Sampled	20/05/25
P-24-0047 Selected PAHs	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	25/05499/1
Client Sample No	1
Client Sample ID/Depth	CSVE-038R 1.80m
Date Sampled	20/05/25
A-T-007s	30/05/2025
A-T-019s	09/06/2025
A-T-044	30/05/2025

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

TEST REPORT

Report Number: 2025-1454

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0757012
Additional Reference: RGN.331B
Issue : 0
Date of Receipt : 29/05/2025
Date of Analysis : 03/06/2025
Date of Report : 09/06/2025
Sample Type : Soil
Customer Sample Identifier : 25/05499/1 1 CSVE-038R 1.80m 20/05/25
Sample Condition : Non-Conforming*

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS. ***Sample's temperature outside of an acceptable range.**

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2025-1454
Customer Sample Identifier : 25/05499/1 1 CSVE-038R 1.80m 20/05/25
Sample Condition : Non-Conforming*
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS Linear	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA Linear	335-67-1	1	µg/kg	ND
PFOS Linear	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 24/11256/2

Amendments: Re-issue following query/investigation

Envirolab Job Number: 24/11256
Issue Number: 3 **Date:** 29 November, 2024

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

Project Manager: Bridgette Shangase/Seb Morrell
Project Name: Victoria North Remediation
Project Ref: 331B
Order No: RIT323649448
Date Samples Received: 18/11/24
Date Instructions Received: 19/11/24
Date Analysis Completed: 29/11/24

Approved by:

Richard Wong
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	[redacted]	24/11256/4	24/11256/5	24/11256/6	24/11256/7	Units	Limit of Detection	Method ref
Client Sample No								
Client Sample ID		TP423VE-004	TP423VE-005	TP423VE-006	TP423VE-007			
Depth to Top		0.00	0.00	0.00	0.00			
Depth To Bottom								
Date Sampled		15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24			
Sample Type		SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code								
PFPeA$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$		<1.00	<1.00	<1.00	<1.00	µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

Lab Sample ID	24/11256/8	24/11256/9	24/11256/10	24/11256/11	24/11256/12	[redacted]	Units	Limit of Detection	Method ref
Client Sample No									
Client Sample ID	TP423VE-008	TP423VE-009	TP423VE-010	TP423VE-011	TP423VE-012				
Depth to Top	0.00	0.00	0.00	0.00	0.00				
Depth To Bottom									
Date Sampled	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24	15-Nov-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code									
% Stones >10mm$_A$	-	-	-	-	-		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$	-	-	-	-	-		mg/kg	0.2	A-T-033s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_A$	-	-	-	-	-				A-T-001
Ammoniacal nitrogen as N (leachable)$_A$	-	-	-	-	-		mg/l	0.05	A-T-033w
PFPeA$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHpA (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
6:2 FTSA; 6:2 FTS (s) $_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFOA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFHxS$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFNA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFOS (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas
PFDA (s)$_A^{\#}$	<1.00	<1.00	<1.00	<1.00	<1.00		µg/kg	1	Subcon Veritas

Envirolab Job Number: 24/11256

Client Project Name: Victoria North Remediation

Client Project Ref: 331B

	[redacted]	Units	Limit of Detection	Method ref
Lab Sample ID				
Client Sample No				
Client Sample ID				
Depth to Top				
Depth To Bottom				
Date Sampled				
Sample Type				
Sample Matrix Code				
% Stones >10mm$_A$		% w/w	0.1	A-T-044
Ammoniacal nitrogen as N$_D$		mg/kg	0.2	A-T-033s
Leachate Prep BS EN 12457-1 (2:1) (1 no)$_A$				A-T-001
Ammoniacal nitrogen as N (leachable)$_A$		mg/l	0.05	A-T-033w

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

Project: Victoria North Remediation

Clients Project No: 331B

Project No: 24/11256

Date Received: 19/11/2024 (am)

Cool Box Temperatures (°C): 4.4 - 5.0

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

[redacted]

nvirolab Analysis Dates

Lab Sample ID				24/11256/4	24/11256/5	24/11256/6	24/11256/7	24/11256/8	24/11256/9	24/11256/10
Client Sample No										
Client Sample ID/Depth	TP423VE-001 0.00m	TP423VE-002 0.00m	TP423VE-003 0.00m	TP423VE-004 0.00m	TP423VE-005 0.00m	TP423VE-006 0.00m	TP423VE-007 0.00m	TP423VE-008 0.00m	TP423VE-009 0.00m	TP423VE-010 0.00m
Date Sampled	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24	15/11/24
A-T-033s										
A-T-033w										
A-T-044										

Lab Sample ID	24/11256/11	24/11256/12	[redacted]								
Client Sample No											
Client Sample ID/Depth	TP423VE-011 0.00m	TP423VE-012 0.00m									
Date Sampled	15/11/24	15/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24	14/11/24
A-T-033s			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
A-T-033w			22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
A-T-044			22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

TEST REPORT

Report Number: 2024-2321

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755476
Project Reference: 331B
Issue : 0
Date of Receipt : 31/10/24
Date of Analysis : 01/11/24
Date of Report : 06/11/04
Sample Type : Soil
Customer Sample Identifier : 24/10539/1 TP422VE-001
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-2321
Customer Sample Identifier : 24/10539/1 TP422VE-001
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	ug/kg	ND
PFHpA	375-85-9	1	ug/kg	ND
PFHxA	307-24-4	1	ug/kg	ND
PFHxS Linear	355-46-4	1	ug/kg	ND
PFNA	375-95-1	1	ug/kg	ND
PFOA Linear	335-67-1	1	ug/kg	ND
PFOS Linear	1763-23-1	1	ug/kg	ND
PFPeA	2706-90-3	1	ug/kg	ND
PFDA	335-76-2	1	ug/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-2322

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755476
Project Reference: 331B
Issue : 0
Date of Receipt : 31/10/24
Date of Analysis : 01/11/24
Date of Report : 07/11/24
Sample Type : Soil
Customer Sample Identifier : 24/10539/2 TP422VE-002
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-2322
Customer Sample Identifier : 24/10539/2 TP422VE-002
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	ug/kg	ND
PFHpA	375-85-9	1	ug/kg	ND
PFHxA	307-24-4	1	ug/kg	ND
PFHxS Linear	355-46-4	1	ug/kg	ND
PFNA	375-95-1	1	ug/kg	ND
PFOA Linear	335-67-1	1	ug/kg	ND
PFOS Linear	1763-23-1	1	ug/kg	ND
PFPeA	2706-90-3	1	ug/kg	ND
PFDA	335-76-2	1	ug/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-2323

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755476
Project Reference: 331B
Issue : 0
Date of Receipt : 31/10/24
Date of Analysis : 01/11/24
Date of Report : 07/11/24
Sample Type : Soil
Customer Sample Identifier : 24/10539/3 TP422VE-003
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-2323
Customer Sample Identifier : 24/10539/3 TP422VE-003
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	ug/kg	ND
PFHpA	375-85-9	1	ug/kg	ND
PFHxA	307-24-4	1	ug/kg	ND
PFHxS Linear	355-46-4	1	ug/kg	ND
PFNA	375-95-1	1	ug/kg	ND
PFOA Linear	335-67-1	1	ug/kg	ND
PFOS Linear	1763-23-1	1	ug/kg	ND
PFPeA	2706-90-3	1	ug/kg	ND
PFDA	335-76-2	1	ug/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-2324

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755476
Project Reference: 331B
Issue : 0
Date of Receipt : 31/10/24
Date of Analysis : 01/11/24
Date of Report : 07/11/24
Sample Type : Soil
Customer Sample Identifier : 24/10539/4 TP422VE-004
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-2324
Customer Sample Identifier : 24/10539/4 TP422VE-004
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	ug/kg	ND
PFHpA	375-85-9	1	ug/kg	ND
PFHxA	307-24-4	1	ug/kg	ND
PFHxS Linear	355-46-4	1	ug/kg	ND
PFNA	375-95-1	1	ug/kg	ND
PFOA Linear	335-67-1	1	ug/kg	ND
PFOS Linear	1763-23-1	1	ug/kg	ND
PFPeA	2706-90-3	1	ug/kg	ND
PFDA	335-76-2	1	ug/kg	ND

ND - not detected

TEST REPORT

Report Number: 2024-2325

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0755476
Project Reference: 331B
Issue : 0
Date of Receipt : 31/10/24
Date of Analysis : 01/11/24
Date of Report : 07/11/24
Sample Type : Soil
Customer Sample Identifier : 24/10539/5 TP422VE-005
Sample Condition : Conforming

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2024-2325
Customer Sample Identifier : 24/10539/5 TP422VE-005
Sample Condition : Conforming
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	ug/kg	ND
PFHpA	375-85-9	1	ug/kg	ND
PFHxA	307-24-4	1	ug/kg	ND
PFHxS Linear	355-46-4	1	ug/kg	ND
PFNA	375-95-1	1	ug/kg	ND
PFOA Linear	335-67-1	1	ug/kg	ND
PFOS Linear	1763-23-1	1	ug/kg	ND
PFPeA	2706-90-3	1	ug/kg	ND
PFDA	335-76-2	1	ug/kg	ND

ND - not detected

TEST REPORT

Report Number: 2025-4127

Customer Name :	Envirolab Ltd
Customer Address :	Housesteads Off Stockport Road Hattersley, SK14 3QU
Order Number :	P0758376
Additional Reference:	331B
Issue :	0
Date of Receipt :	30/10/2025
Date of Analysis :	31/10/2025
Date of Report :	06/11/2025
Sample Type :	Soil
Customer Sample Identifier :	25/12283/1 TP423V1 0.00m 24/10/25
Sample Condition :	Non-Conforming*

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
*** Sample's temperature outside of suitable range**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2025-4127
Customer Sample Identifier : 25/12283/1 TP423V1 0.00m 24/10/25
Sample Condition : Non-Conforming*
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS Linear	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA Linear	335-67-1	1	µg/kg	ND
PFOS Linear	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

TEST REPORT

Report Number: 2025-4128

Customer Name :	Envirolab Ltd
Customer Address :	Housesteads Off Stockport Road Hattersley, SK14 3QU
Order Number :	P0758376
Additional Reference:	331B
Issue :	0
Date of Receipt :	30/10/2025
Date of Analysis :	31/10/2025
Date of Report :	06/11/2025
Sample Type :	Soil
Customer Sample Identifier :	25/12283/2 TP423V2 0.00m 24/10/25
Sample Condition :	Non-Conforming*

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
*** Sample's temperature outside of suitable range**

Approved by : Karolina Pettit
Position : Director

Signature : [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2025-4128
Customer Sample Identifier : 25/12283/2 TP423V2 0.00m 24/10/25
Sample Condition : Non-Conforming*
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS Linear	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA Linear	335-67-1	1	µg/kg	ND
PFOS Linear	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

TEST REPORT

Report Number: 2025-4129

Customer Name : Envirolab Ltd
Customer Address : Housesteads
Off Stockport Road
Hattersley, SK14 3QU
Order Number : P0758376
Additional Reference: 331B
Issue : 0
Date of Receipt : 30/10/2025
Date of Analysis : 31/10/2025
Date of Report : 06/11/2025
Sample Type : Soil
Customer Sample Identifier : 25/12283/3 TP423V3 0.00m 24/10/25
Sample Condition : Non-Conforming*

Comments:
Any opinions or interpretations are outside the laboratory's scope of accreditation. The results included within the report are representative of the samples submitted for analysis and are expressed on as received basis, unless otherwise stated. This certificate shall not be reproduced, except in full, without the prior written approval of VLS.
*** Sample's temperature outside of suitable range**

Approved by : Karolina Pettit
Position : Director

Signature [redacted]

UKAS TESTING
26667

Results PFAS

Sample Type : Soil
Test Report Number : 2025-4129
Customer Sample Identifier : 25/12283/3 TP423V3 0.00m 24/10/25
Sample Condition : Non-Conforming*
Test Method : VLS SOP 021

PFAS Compound	CAS Reg No	MDLs	Units	Conc.
6:2 FTSA; 6:2 FTS	27619-97-2	1	µg/kg	ND
PFHpA	375-85-9	1	µg/kg	ND
PFHxA	307-24-4	1	µg/kg	ND
PFHxS Linear	355-46-4	1	µg/kg	ND
PFNA	375-95-1	1	µg/kg	ND
PFOA Linear	335-67-1	1	µg/kg	ND
PFOS Linear	1763-23-1	1	µg/kg	ND
PFPeA	2706-90-3	1	µg/kg	ND

ND - not detected

Appendix J

Socotec gasworks asbestos report

Ref: NOR4025/001/SC Rev00

08 August 2024

18-19 Drome Road
Deeside Industrial Estate
Deeside
Flintshire
Wales
CH5 2NY

Telephone: 01244288200

BAM Nuttall Ltd
BAM Nuttall Site Compound
Hargreaves Street
Manchester
M4 4EJ

For the attention of Mr Liam Chambers

HARGRAVE STREET, MANCHESTER
SAMPLING AND LABORATORY ANALYSIS OF ASBESTOS CONTAMINATED SOILS

1 Introduction

SOCOTEC understands that during works at the above referenced site, an area of in situ asbestos containing material (ACM) contaminated ground has been encountered during excavation works. The hotspot has been fenced off and is approximately 15 m by 15 m in size. The full extent of the ACM/asbestos hotspot is not currently known. BAM Nuttall Ltd (BAM) requested that SOCOTEC attend site to provide an asbestos watching brief and to help direct and supervise the further investigation, delineation, segregation and stockpiling of the ACM contaminated soils from the area.

The offer to carry out the work was presented in SOCOTEC proposal reference QLO/EN-285769/CE Rev00, dated 17th July 2024. This proposal was accepted by BAM via order number BAA.2210/4000200594 instruction no. 010, dated 17th July 2024.

2 Fieldwork

SOCOTEC attended the site on the 18th and 19th July to carry out the proposed watching brief of the asbestos/ACM excavation, stockpiling and delineation works. However, upon attending site it became apparent that the soils in the area were not to be fully excavated and stockpiled, but rather that BAM wanted to perform an ACM/asbestos delineation investigation of the affected area.

On 18th July, the SOCOTEC Environmental Scientist carried out a walkover of the exposed ACM hotspot and the surrounding surface soils. The ACM hotspot is within an area of the site known as Gas Works Area 2 (GWA2), which is in the process of being excavated, and is currently at a lower level than the main area of the site which lies to the northwest. Gas Works Area 1 (GWA1), which is roughly to the southwest of GWA2 has previously been excavated and turned over and Gas Works Area 3 (GWA3), which is roughly to the northeast of GWA2, is currently a deep open excavation.

In GWA2, the ground profile was expected to comprise a thin remaining layer of Made Ground over the natural CLAY soils which can be seen in the deep excavation in GWA3. The ground profile of the higher site level directly northwest of GWA2 was expected to comprise a much thicker layer or several layers of Made Ground overlying the natural CLAY. The ACM hotspot has been uncovered in the north western area of GWA2, directly against the boundary with the higher site level.

Following discussions with the BAM site representative, it was decided that a series of shallow trenches would be excavated in the remaining Made Ground on the lower level to the east and south of the open ACM hotspot excavation to assess for visible ACMs, and that a series of deeper

trenches/pits would be excavated on the higher level directly to the northwest of the ACM hotspot down to the natural CLAY to try and confirm that the ACM hotspot does not continue outside of GWA2.

In total, 15 trenches were mechanically excavated around the open asbestos hotspot excavation, to a maximum depth of 0.40 m below ground level (bgl). 12 of the trenches labelled 'Trench 1' to 'Trench 12', were excavated in the lower GWA2 area, and three trenches, labelled 'Trench 13' to 'Trench 15', were excavated on the higher site level. Visible suspected ACM fragments were noted in nine of the 15 trenches (Trenches 1, 2, 3, 7, 8, 9, 11, 12 and 14). Samples of suspected ACM were collected from all but Trench 2 and sent confirmatory testing.

Due to observations of suspected ACMs within the Made Ground and at the surface on the higher site level, it was decided that additional trial pits would be excavated at the higher site level in the Made Ground further to the northwest of the asbestos hotspot. In total three machine excavated trial pits labelled 'TP01' to 'TP03' were excavated on the higher site level to a maximum depth of 1.90 m bgl. Five soil samples and four suspected ACMs were collected from the three trial pits and two suspected ACMs were collected from the surface in the area of the trial pits.

Descriptions of the material encountered and sampled are presented in Table 1 below. An exploratory hole location plan is presented in Appendix A and a series of photographs are presented in Appendix B.

Table 1 Soil Descriptions

Location	Trench / Trial Pit	Sample / Depth (m)	Soil Description
GWA2	Asbestos Hotspot	ACM1	Suspected ACM (corrugated cement).
	Asbestos Hotspot	ACM2	Suspected ACM (cement).
	Trench 1	ACM3	0.00-0.40 m bgl – Black mottled orange slightly clayey sandy angular to subrounded fine to coarse GRAVEL of slag, ash, coal, brick fragments, concrete, slate and occasional sandstone with a medium cobble content and hydrocarbon staining. Sand is fine to coarse. Cobbles are subangular brick. Also noted wood fragments, frequent glass and rare metal. (MADE GROUND) - Suspected ACM (cement) fragment noted 0.10-0.25 m bgl. - Large pocket of suspected ACMs (cement) noted at 0.40 m bgl in north corner of trench.
	Trench 2	-	0.00-0.15 m bgl – Black mottled orange slightly clayey sandy angular to subrounded fine to coarse GRAVEL of slag, ash, coal, brick fragments, concrete, slate, occasional sandstone and suspected ACM fragments (cement) with a medium cobble content. Sand is fine to coarse. Cobbles are subangular brick. Also noted wood fragments, frequent glass and rare metal. (MADE GROUND)
	Trench 3	ACM4	0.00-0.15 m bgl – Black mottled orange slightly clayey sandy angular to subrounded fine to coarse GRAVEL of slag, ash, coal, brick fragments, concrete, slate, occasional sandstone and suspected ACM fragments (corrugated cement) with a medium cobble content. Sand is fine to coarse. Cobbles are subangular brick. Also noted wood fragments, frequent glass and rare metal. (MADE GROUND)
	Trench 4	-	0.00-0.10 m bgl – Black mottled orange slightly clayey sandy GRAVEL with a medium cobble content mixed with brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to

Location	Trench / Trial Pit	Sample / Depth (m)	Soil Description
			subrounded fine to coarse of slag, ash, coal, brick fragments, concrete, slate and occasional sandstone. Cobbles are subangular brick. Also noted wood, glass, metal and fabric fragments. (MADE GROUND)
	Trench 5	-	0.00-0.15 m bgl – Dark brown and brown very sandy GRAVEL with a medium cobble content mixed with brown very clayey fine to coarse SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick fragments, sandstone, slag/ash and concrete. Cobbles are angular to subangular brick and concrete. Also noted plastic and wood fragments. (MADE GROUND) 0.15-0.25 m bgl – As above mixed with orange SAND, dark cream SAND and dark cream sandy CLAY. Gravel of mudstone and ceramic fragments also noted. (MADE GROUND) 0.25-0.40 m bgl – Brown CLAY with pockets of orange fine sand mixed with brown clayey sandy GRAVEL with a medium cobble content. Sand is fine to coarse. Gravel is angular to rounded fine to coarse mudstone, sandstone, brick fragments, concrete and occasional ash. Cobbles are angular to subangular brick and concrete. Wood and plastic fragments also noted. (MADE GROUND)
	Trench 6	-	0.00-0.30 m bgl – Brown sandy clayey GRAVEL mixed with brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded fine to coarse of ash/slag, brick fragments, concrete, coal, quartzite, sandstone and mudstone with a medium cobble content. Cobbles are angular to subangular brick. Wood fragments and plastic sheeting also noted. (MADE GROUND) - Glass and pockets of rootlets noted 0.15-0.30 m bgl. - Groundwater ingress at 0.25 m bgl.
	Trench 7	ACM5 ACM6	0.00-0.25 m bgl – Dark brown sandy clayey angular to rounded fine to coarse GRAVEL of brick fragments, concrete, slag/ash, ceramic, sandstone and suspected ACM (corrugated cement) with a medium to high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded brick. Metal, glass and organic matter also noted. (MADE GROUND) - occasional brown CLAY 0.20-0.25 m bgl.
	Trench 8	ACM7	0.00-0.25 m bgl – Dark brown and brown sandy clayey angular to subrounded fine to coarse GRAVEL of slate, sandstone, brick fragments, coal, slag/ash, ceramic and concrete with a medium coble content and occasional rootlets. Sand is fine to coarse. Cobbles are angular to subangular brick. Plastic, glass, metal and plastic sheeting also noted (MADE GROUND) - Suspected ACM (corrugated cement) fragment noted 0.10-0.25 m bgl.
	Trench 9	ACM8	0.00-0.10 m bgl – Brown sandy very gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse slag/ash, coal, brick fragments, concrete, slate, sandstone and suspected ACM (corrugated cement). Cobbles are subangular to subrounded brick. Metal, glass, plastic and wood fragments also noted. (MADE GROUND) 0.10 m bgl – Concrete pad and CLAY.
	Trench 10	-	0.00-0.10 m bgl – Dark brown sandy very clayey GRAVEL and sandy very gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse slag/ash, coal,

Location	Trench / Trial Pit	Sample / Depth (m)	Soil Description
			quartzite, brick fragments, slate, concrete and coal. Cobbles are subangular brick. (MADE GROUND) 0.10 m bgl – Brick structure.
	Trench 11	ACM9	0.00-0.20 m bgl – Brown gravelly clayey fine to coarse SAND with a low cobble content. Gravel is angular to rounded fine to coarse quartz, brick fragments, coal, concrete, sandstone, slag/ash and ceramic. Cobbles are angular to subangular brick and concrete. Metal and plastic sheeting also noted. (MADE GROUND)
	Trench 12	ACM10	0.00-0.25 m bgl – Brown gravelly very sandy CLAY with a low cobble content mixed with orange fine to medium SAND, orange and brown CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick fragments, ceramic and concrete. Cobbles are angular brick. (MADE GROUND) - Suspected ACM (corrugated cement) noted 0.10-0.25 m bgl.
	Trench 13	-	0.00-0.30 m bgl – Black and dark grey slightly clayey sandy angular to rounded fine to coarse GRAVEL of coal, slag/ash, mudstone, brick fragments, concrete, ceramic and slate with a low cobble content. Sand is fine to coarse. Cobbles are angular brick. Glass, metal and plastic also noted. (MADE GROUND) - CLAY 0.15-0.30 m bgl. 0.30-0.60 m bgl – As above mixed with orangish brown mottled cream grey light grey and pink slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to rounded fine to medium mudstone and sandstone.
	Trench 14	ACM11	0.00-0.25 m bgl – Dark brown and greyish brown slightly sandy clayey sandy angular to rounded fine to coarse GRAVEL of slag/ash, brick fragments, concrete, sandstone, mudstone, coal, slate and ceramic fragments with a medium cobble content. Sand is fine to coarse. Cobbles are brick and mudstone. Glass, plastic and wood fragments also noted. (MADE GROUND) - Suspected ACM fragments (cement) noted 0.10-0.25 m bgl. 0.25-0.40 m bgl – As above mixed with brown CLAY. (MADE GROUND)
	Trench 15	-	0.00-0.15 m bgl – Dark brown and greyish brown slightly sandy clayey sandy angular to rounded fine to coarse GRAVEL of slag/ash, brick fragments, concrete, sandstone, mudstone, coal, slate and ceramic fragments with a medium cobble content and roots and rootlets. Sand is fine to coarse. Cobbles are brick and mudstone. Glass, plastic and wood fragments also noted. (MADE GROUND)
Higher Site Level	Surface 1	ACM12 - 0.00	Suspected ACM (white cement/plaster like material containing visible fibres).
	Surface 2	ACM13 - 0.00	Suspected ACM (possible AIB).
	TP01	ES1 – 0.00-0.10 ACM1 - 0.00-0.10 ES2 – 0.50-0.60 ES3 –	0.00-0.10 m bgl – Brown sandy clayey angular to subrounded fine to coarse GRAVEL of brick fragments, ceramic fragments, concrete, granite, slate, slag/ash and suspected ACM (white cement/plaster like material containing visible fibres). Sand is fine to coarse. Glass, metal, wood fragments and plastic sheeting also noted. (MADE GROUND) 0.10-0.40 m bgl – Black sandy angular to subrounded fine to coarse GRAVEL of slag/ash, coal and occasional brick fragments, sandstone and concrete with a low cobble content. Sand is fine to coarse. Cobbles are angular slag mixed with pale brown slightly clayey very

Location	Trench / Trial Pit	Sample / Depth (m)	Soil Description
		1.80-1.90	gravelly fine to coarse SAND with a medium cobble content. Gravel is angular to rounded fine to coarse slag/ash, brick fragments, ceramic and concrete. Cobbles are brick and ceramic. Glass, wood, plastic and metal fragments also noted. (MADE GROUND) 0.40-1.50 m bgl - Dark brown gravel sandy angular to subrounded fine to coarse GRAVEL of slag/ash, coal and occasional brick fragments, sandstone and concrete with a low cobble content. Sand is fine to coarse. Cobbles are angular to rounded mudstone, sandstone and slag. (MADE GROUND) - pockets of brown very clayey sand / sandy clay with a medium cobble content noted 0.50-0.60 m bgl. Sand is fine to medium. Cobbles are rounded mudstone. - pockets of roots and rootlets noted 0.60-0.70 m bgl. 1.50-1.90 m bgl – Dark reddish brown and orange slightly sandy subangular to subrounded fine to coarse GRAVEL of slag with a medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded slag. - Groundwater ingress at 1.80 m bgl.
	TP02	ES1 – 0.00-0.05 ACM1 - 0.15-0.30 ES2 – 0.20-0.50 ACM2 – 0.45 ES3 – 0.50-0.80	0.00-0.05 m bgl – Dark grey mottled dark brown slightly sandy gravelly CLAY with a strong tar odour. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick fragments, mudstone and coal. Loose fibrous material (suspected ACM) also noted. (MADE GROUND) 0.05-0.20 m bgl – Brown and dark brown gravelly silty fine to coarse SAND with a low coble content. Gravel is angular to rounded fine to coarse brick fragments, mudstone, concrete, ceramic and slag/ash. Occasional wood, metal and plastic fragments also noted. (MADE GROUND) - white and purplish friable plate like/fibrous material (suspected ACM) noted at 0.20 m bgl. 0.20-1.20 m bgl – Dark greyish brown sandy angular to rounded fine to coarse GRAVEL of mudstone, brick fragments, slag/ash, coal, concrete and ceramic. White fibrous material, and plastic also noted. - mixed with brown gravelly clayey fine to coarse SAND. Gravel is subrounded to rounded fine to coarse mudstone and slag 0.50-0.80 m bgl. - pockets of brown CLAY 0.80-1.20 m bgl.
	TP03	AMC1 – 0.00-0.15 ES1 – 0.15-0.30 ES2 – 0.45	0.00-0.45 m bgl – Brown sandy clayey angular to rounded fine to coarse GRAVEL of brick fragments, ceramic fragments, concrete, sandstone, tile, other anthropogenic materials and a suspected ACM (fibrous coating on concrete) with a medium cobble content and a very strong rotten egg / leachate like odour. Sand is fine to coarse. Cobbles are angular to subangular brick and tile. Degraded plastic sheeting, cork, glass, wood and other waste materials also noted. (MADE GROUND) - Pockets of gravelly CLAY noted 0.15-0.30 m bgl. Gravel is angular to rounded fine to coarse brick fragments and mudstone. - Foam, counter cuttings and asphalt noted 0.30-0.45 m bgl. 0.45-0.80 m bgl – Dark brown and black gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse coal, slag and ash. (MADE GROUND) - Metal pipe surrounded by wooden insulation noted at 0.80 m bgl.

In addition to the above mentioned ACMs encountered in the soils, hydrocarbon staining was noted in the Trenches 1 to 4, a strong tar like odour was noted in TP02 at 0.00 – 0.05 m bgl and a very strong rotten egg / leachate like odour was noted in TP03 at 0.00 – 0.15 m bgl.

Each soil sample comprised one 1 litre plastic tub. The sampling containers were placed in a tote box and transported to the laboratories of ALS at Hawarden, Chester for MCerts and UKAS accredited laboratory analysis.

Each suspected bulk ACM sample was double bagged, securely packaged in a tote box and transported to the laboratories of SOCOTEC at Doncaster for laboratory analysis.

3 Laboratory Testing

A programme of laboratory testing was scheduled by SOCOTEC on the soil samples for a range of potential contaminants to allow the materials to be characterised for waste disposal purposes.

The scheduled laboratory analysis is detailed in Table 2 and the results are presented in the appended laboratory test reports 285802 and 736218, presented in Appendix C.

Table 2 Summary of Soil Laboratory Testing

Determinand	No. of tests
Bulk Asbestos Identification	17
Asbestos Screen and ID	8
Asbestos Quantification	3

4 Laboratory Analysis

4.1 Bulk Asbestos

Of the 17 suspected ACM pieces submitted to the laboratory, asbestos was confirmed as being present in 11 of them. The confirmed ACMs were identified as chrysotile cement or chrysotile and crocidolite cement and were recorded in Trench 1, Trench 3, Trench 7, Trench 8, Trench 9, Trench 11, Trench 12 and Trench 14. The visually identifiable asbestos containing material (ACM) is highly likely to contain more than 0.1% asbestos. The locations of the confirmed ACM fragments are presented in Figure 2.

The six fibrous materials suspected of being AMCs sampled from the higher site level were recorded as having no detectable asbestos.

4.2 Asbestos in Soil

Asbestos in the form of chrysotile fibre bundles was recorded in samples TP01 ES1 and TP02 ES1 and chrysotile ACM debris was recorded in TP03 ES2. Subsequent quantification analysis has recorded a maximum concentration of 0.019% asbestos present as fibre bundles, which was identified by the laboratory during gravimetric analysis.

5 Conclusions and Recommendations

Quantities of visible ACMs in the Made Ground soils in Gas Works Area 2 varied laterally around the original large pocket of ACMs uncovered by BAMs excavation works. On a lateral scale, ACM fragments were identified up to the boundaries of GWA1 (Trench 8) and GWA3 (Trenches 1 & 2), as far to the northeast as the open Tar Tank excavation and was proved not to extend to the northwest into the higher site level past Trenches 13, 14 and 15, where natural CLAY was encountered at the same depth as the identified ACM contamination at the lower level. Vertically, ACM fragments were identified throughout the Made Ground which lies above the natural CLAY in GWA2 and the buried concrete pads and brick structures identified in the original ACM hotspot excavation and in Trenches 9 and 10.

The ACMs in GWA2 have been confirmed by laboratory analysis to be asbestos containing cement. Due to the frequency and extent of asbestos cement identified within the Made Ground in Gas Works Area 2, it is recommended that all of the remaining Made Ground to be excavated from this area be considered as part of the ACM hotspot, and treated as hazardous with respect to asbestos for waste disposal purposes (N.B The soils may also be hazardous due to chemical contamination, but this has not been assessed in this investigation). The inferred lateral extent of the ACM hotspot is indicated in Figure 4.

A fragment of asbestos cement was also identified in the Made Ground in the higher level of site directly to the northwest of the asbestos hotspot in Trench 14, however the other six suspected ACMs from this area were all determined to be non-asbestos containing fibrous materials. Low quantities of asbestos (<0.001 % to 0.0019 %) were also identified in three of the soil samples from trial pits TP01, TP02 and TP03 at depths between 0.00 m to 0.45 m bgl.

It is recommended that the existing LK Asbestos Management Plan is updated to take account of the findings of this investigation / report and that a watching brief is maintained by a trained and competent person throughout all excavation of the Made Ground and breaking out of the concrete pads and brick structures in Gas Works Area 2, and that any works in this area are carried out in accordance with the LK Asbestos Management Plan.

SOCOTEC trust that this report meets your requirements, but please contact us should you require clarification on any of the matters raised.

Yours faithfully,

for **SOCOTEC**



Stephanie Collier
Senior Environmental Scientist
stephanie.collier@socotec.com

Review Record

Issue No Date	Prepared by	Checked by	Approved by
1 August 2024	Stephanie Collier BSc (Hons)	Chris Evans BSc (Hons), MSc	Chris Evans BSc (Hons), MSc

References

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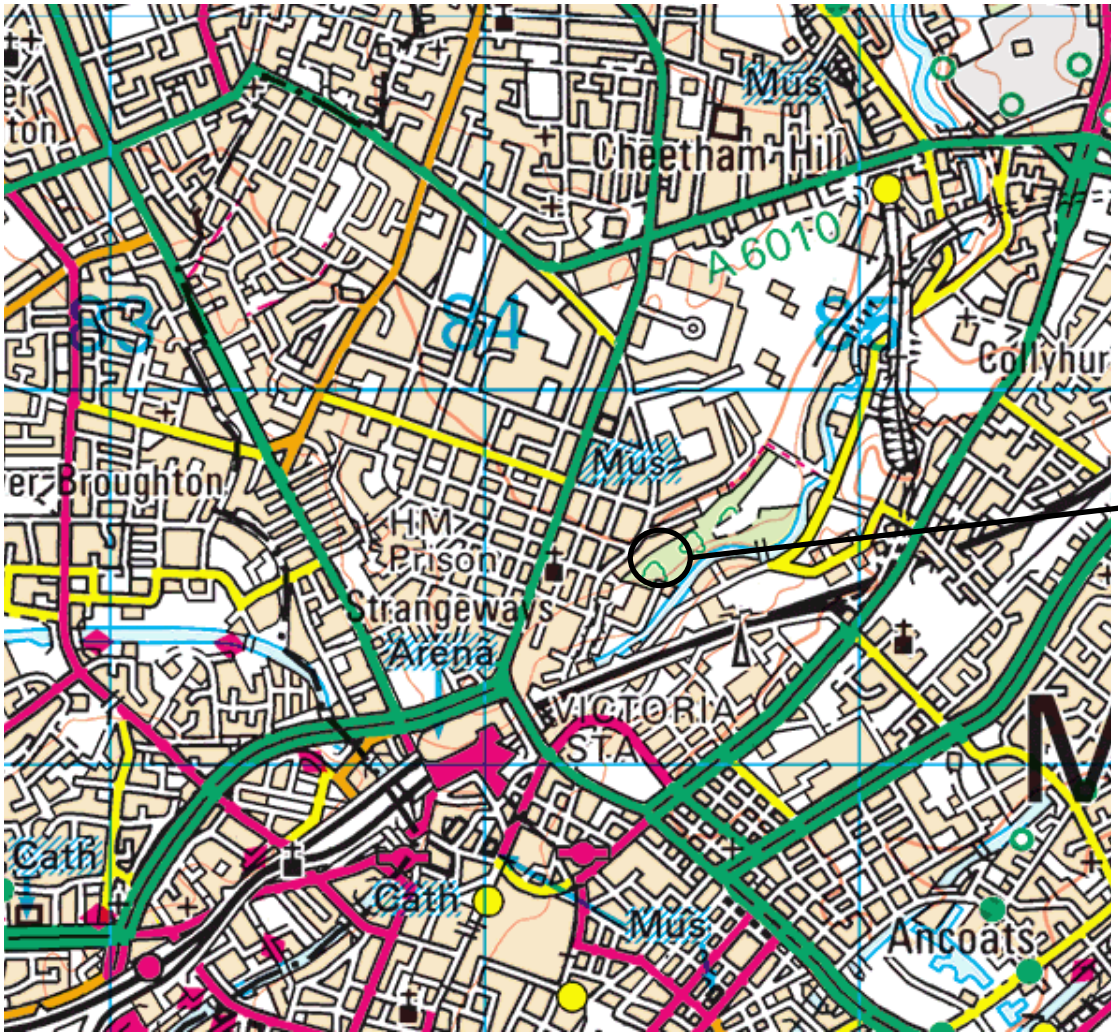
Whilst every effort has been made to ensure the accuracy of the data supplied and any analysis interpretation derived from it, the possibility exists of variations in the ground and groundwater conditions around and between the exploratory positions. No liability can be accepted for any such variations in these conditions. Furthermore, any recommendations are specific to the development as detailed in this Report and no liability will be accepted should they be used for the design of alternative schemes without prior consultant with SOCOTEC UK Limited.

APPENDIX A

Figures

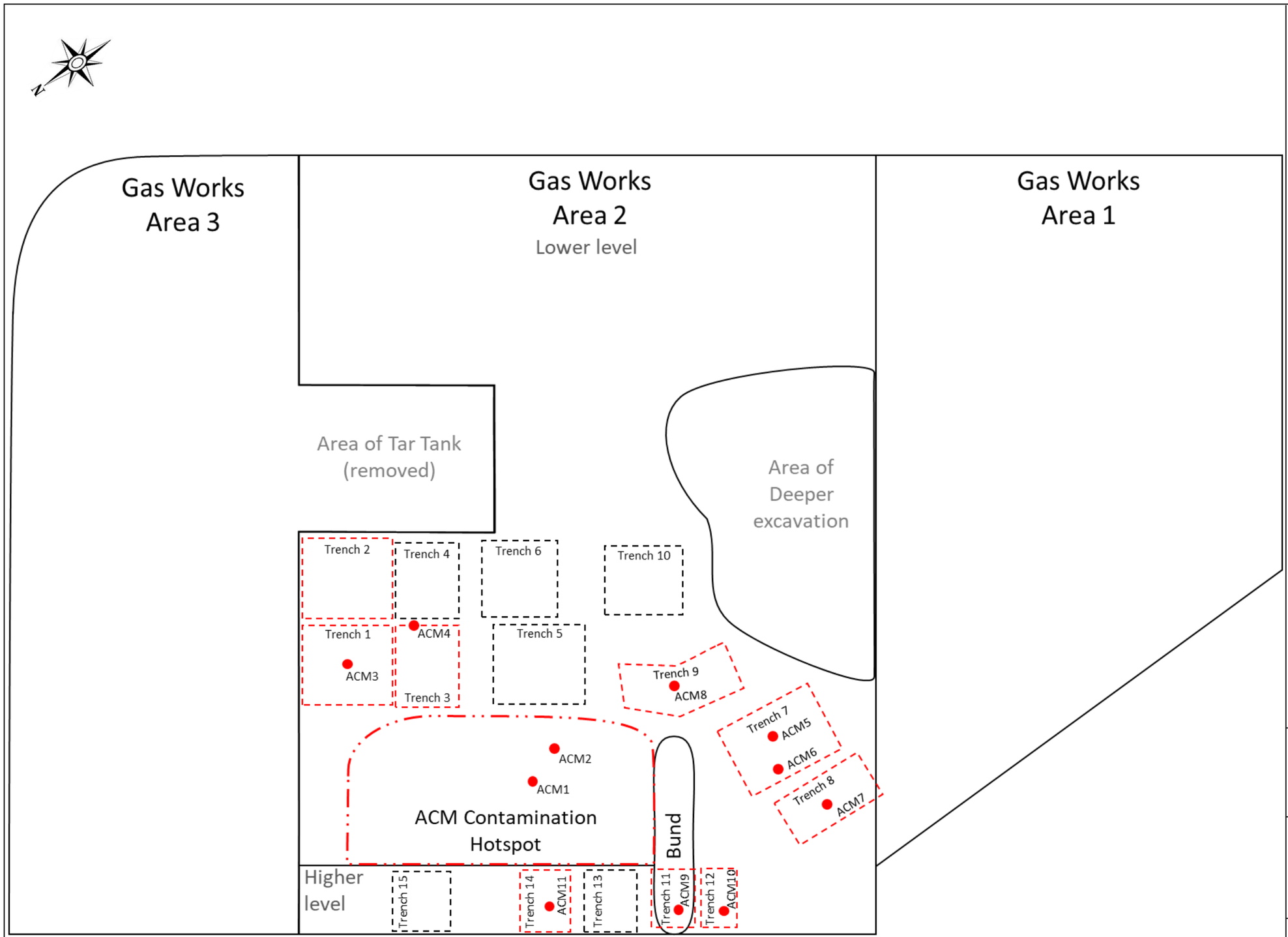
Site Location Plan

N



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Notes:		
See map for scale	**Project** Hargreaves Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall	**Figure** 1



Legend to symbols:

- Current boundary of ACM Hotspot
- Trench with no visible ACM fragments noted
- Trench **with** visible ACM fragments
- Confirmed ACM Sample

Approximate Site Sketch. Not to Scale.

Title

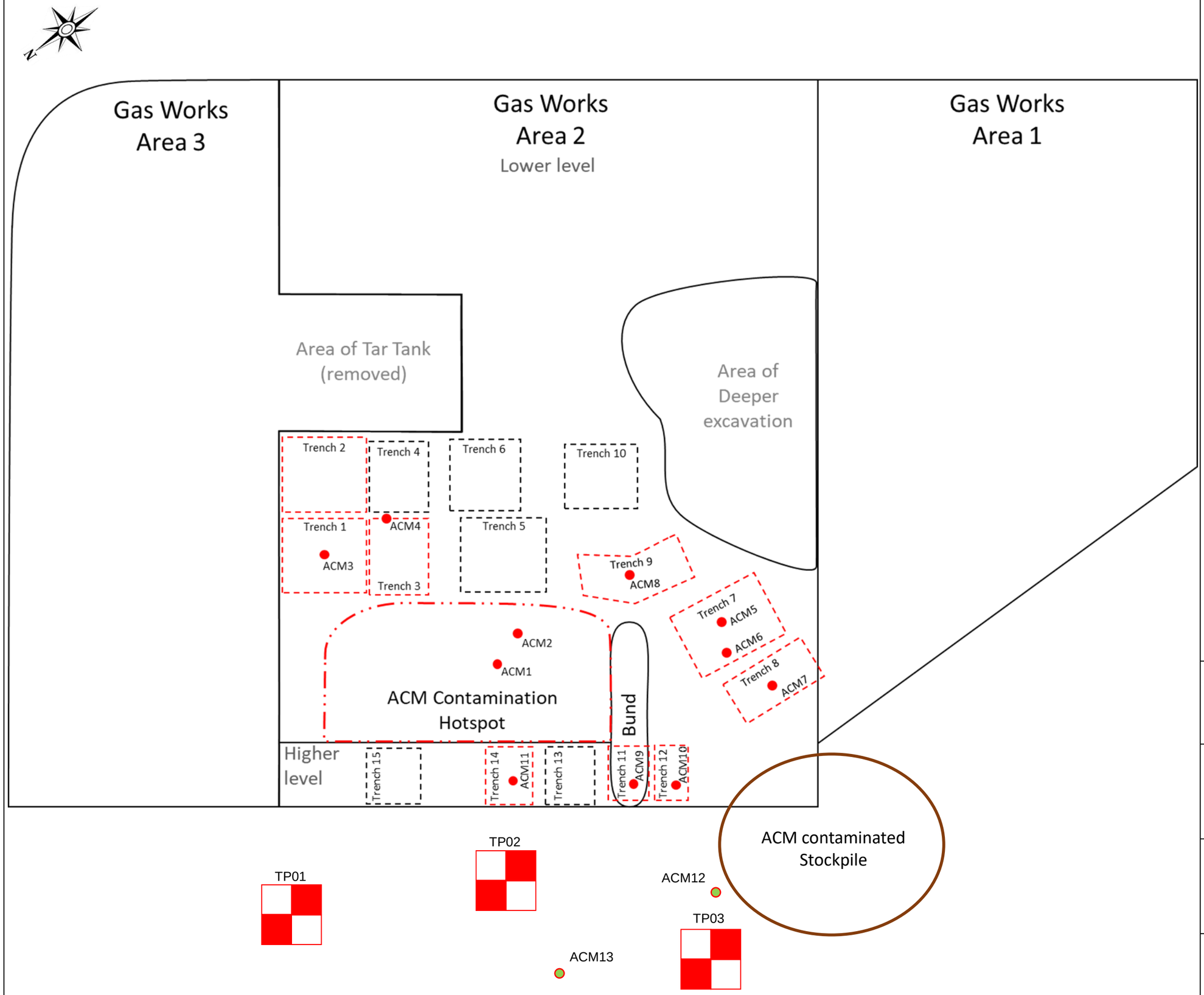
Trench Location Plan

Project

Hargrave Street, Manchester

SOCOTEC

Project No	Figure No.
NOR4025	2



Legend to symbols:

- Current boundary of ACM Hotspot
- Trench with no visible ACM fragments noted
- Trench **with** visible ACM fragments
- Confirmed ACM Sample
- Trial Pit
- Suspected ACM Sample confirmed as N.A.D.I.S

Approximate Site Sketch. Not to Scale.

Title

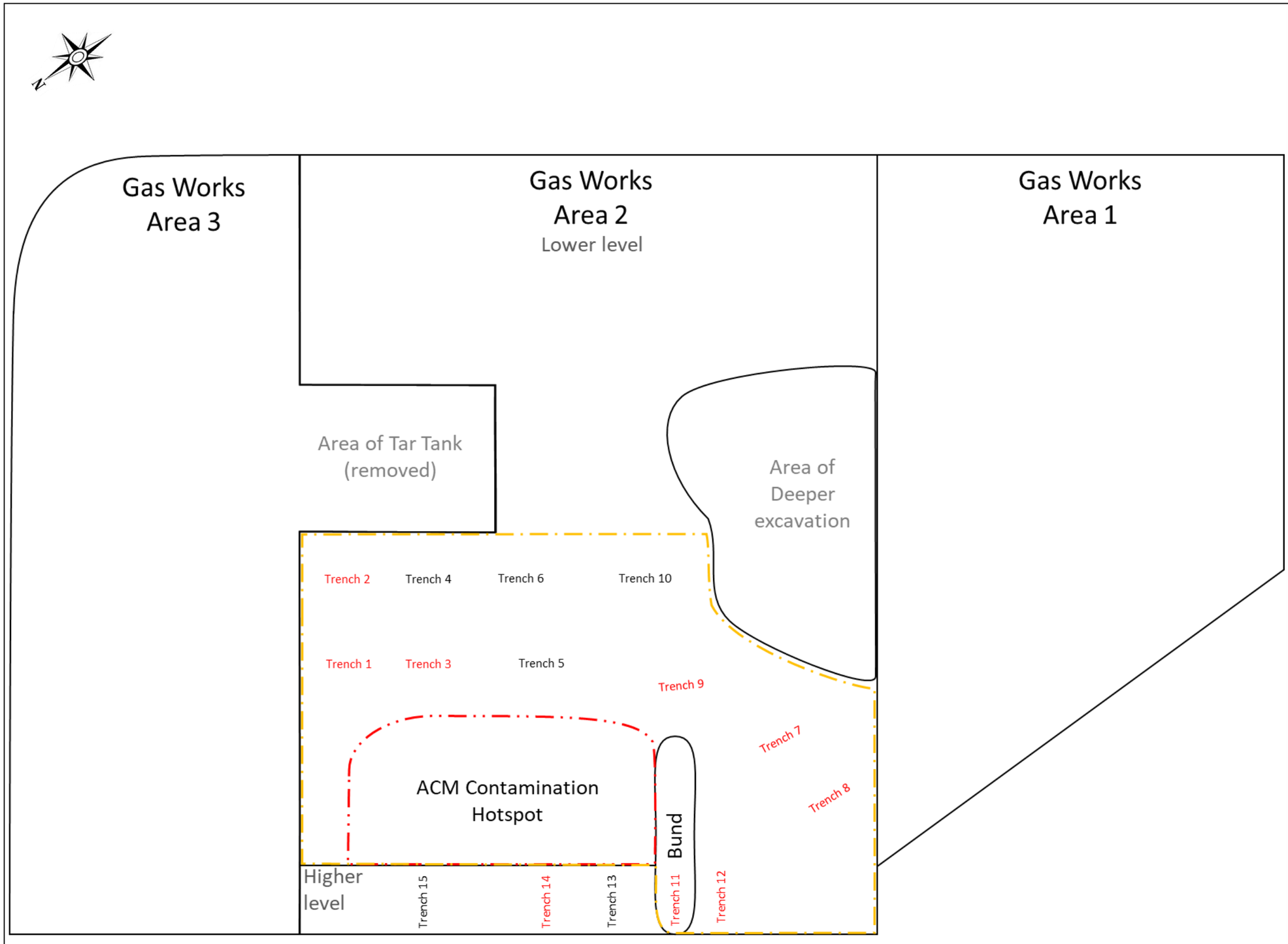
Trial Pit Location Plan

Project

Hargrave Street, Manchester

SOCOTEC

Project No	Figure No.
NOR4025	3



Legend to symbols:

Origional boundary of ACM Hotspot

Inferred extent of ACM contamination in Made Ground in GWA2

Approximate Site Sketch. Not to Scale.

Title

Inferred ACM Hotspot

Project

Hargrave Street, Manchester

SOCOTEC

Project No	Figure No.
NOR4025	4

APPENDIX B

Photographs

Site Photographs





Notes:

P1 & P2 – Original extent of ACM hotspot uncovered

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

1 & 2

Site Photographs





Notes:

P3 & P4 – ACM fragments (asbestos cement) within hotspot

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

3 & 4

Site Photographs





Notes:

P5 – Trench 1
P6 – Trench 1 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

5 & 6

Site Photographs





Notes:

P7 – Pocket of ACM fragments (asbestos cement) in base of Trench 1
P8 – Trench 2

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

7 & 8

Site Photographs





Notes:
P9 – Trench 2 spoil
P10 – ACM fragments (asbestos cement) in Trench 2

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
9 & 10

Site Photographs





Notes:		Plates:
P11 – Trench 3 P12 – Trench 3 spoil	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	11 & 12

Site Photographs





Notes:
P13 – ACM fragments (asbestos cement) I Trench 3 spoil
P14 – Trench 4

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
13 & 14

Site Photographs





Notes:		Plates:
P15 – Trench 4 spoil P16 – Trench 5	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	15 & 16

Site Photographs





Notes:

P17 – Trench 5 spoil
P18 – Trench 6

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

17 & 18

Site Photographs





Notes:		Plates:
P19 – Trench 6 spoil P20 – Trench 7	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	19 & 20

Site Photographs





Notes:
P21 – Trench 7 spoil
P22 –ACM fragments (asbestos cement) in Trench 7 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
21 & 22

Site Photographs





Notes:		Plates:
P23 – Trench 8 P24 – Trench 8 spoil	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	23 & 24

Site Photographs





Notes:
P25 – ACM fragments (asbestos cement) in Trench 8
P26 – Trench 9

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
25 & 26

Site Photographs





Notes:
P27 – Trench 9 spoil
P28 – ACM fragment (asbestos cement) in Trench 9 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
27 & 28

Site Photographs





Notes:		Plates:
P29 – Trench 10 P30 – Trench 10 spoil	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	29 & 30

Site Photographs





Notes:		Plates:
P31 – Trench 11 P32 – Trench 11 spoil	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	31 & 32

Site Photographs





Notes:
P33 – ACM fragments (asbestos cement) in Trench 11 spoil
P34 – Trench 12

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
33 & 34

Site Photographs





Notes:
P35 – Trench 12 spoil
P36 – ACM fragments (asbestos cement) in Trench 12 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
35 & 36

Site Photographs





Notes:

P37 – Trench 13
P38 – Trench 13 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

37 & 38

Site Photographs





Notes:		Plates:
P39 – Trench 14 P40 – Trench 14 spoil	**Project** Hargrave Street, Manchester **Project No.** NOR4025 **Carried out for** BAM Nuttall Ltd	39 & 40

Site Photographs





Notes:
P39 – ACM fragment (asbestos cement) in Trench 14 spoil
P40 – Trench 15

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
41 & 42

Site Photographs





Notes:
P43 – Trench 15 spoil
P44 – Suspected ACM fragment on surface of higher site level

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
43 & 44

Site Photographs





Notes:

P45 – TP01
P46 – TP01 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:

45 & 46

Site Photographs





Notes:
P47 – Suspected ACM fragment in TP01 spoil
P48 – TP02

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
47 & 48

Site Photographs





Notes:
P49 – TP02 spoil
P50 – Suspected ACM1 in TP02 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
49 & 50

Site Photographs





Notes:
P51 – Suspected ACM2 in TP02 spoil
P52 – TP03

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
51 & 52

Site Photographs





Notes:
P53 – TP03 spoil
P54 – Suspected ACM coating on concrete in TP03 spoil

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
53 & 54

Site Photographs



Notes:
P55 – Suspected ACM fragment (Surface 2 - ACM13) on surface of higher site level

Project	**Hargrave Street, Manchester**
Project No.	**NOR4025**
Carried out for	**BAM Nuttall Ltd**

Plates:
55

APPENDIX C

Laboratory Test Results

BAM Nuttall Ltd
St James House
Knoll Road
Camberley, GU15 3XW

SOCOTEC Asbestos Limited
Bretby Business Park
Ashby Road
Burton upon Trent, DE15 0YZ

01/08/2024

Dear Chris Evans,

ANALYSIS OF MATERIALS FOR PRESENCE OF ASBESTOS

Please find attached the test results following the analysis of suspect materials for the presence of asbestos. Bulk sample analysis was carried out in accordance with SOCOTEC Asbestos Limited's internal procedure SCI/ASB/007, based on the Health and Safety Executive publication HSG 248. SOCOTEC Asbestos is a UKAS-accredited testing body No. 1089, ensuring compliance with the requirements of BS EN ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories.*

Should you require any further assistance please do not hesitate to contact the office.

Yours Sincerely

[redacted]

Nichola Hayes

CERTIFICATE FOR IDENTIFICATION OF ASBESTOS FIBRES					
Client	BAM Nuttall Ltd	**No. of Samples**	17	**Sample(s) received in lab**	26/07/2024
Site	Hargreaves Street, Victoria, Manchester, M4 4EN	**Surveyed**	26/07/2024 - 01/08/2024	**Samples analysed**	31/07/2024
Sampled by	External	**Sample(s) Taken**	26/07/2024	**Report Date**	01/08/2024
Lab Address	SOCOTEC Asbestos Limited, Wellsyke Road, Adwick le Street, Doncaster, DN6 7DU				

SOCOTEC Sample No	Building	Floor	Location	Material Description	Product Type*	Fibre Type Detected
001	N/A	N/A	N/A	ACM Hotpot - ACM1	Cement	Chrysotile
002	N/A	N/A	N/A	ACM Hotpot 2 - ACM2	Cement	Chrysotile
003	N/A	N/A	N/A	Trench 1 - ACM3	Cement	Chrysotile
004	N/A	N/A	N/A	Trench 3 - ACM4	Cement	Chrysotile
005	N/A	N/A	N/A	Trench 7 - ACM5	Cement	Chrysotile
006	N/A	N/A	N/A	Trench 7 - ACM6	Cement	Chrysotile
007	N/A	N/A	N/A	Trench 8 - ACM7	Cement	Chrysotile
008	N/A	N/A	N/A	Trench 9 - ACM8	Cement	Chrysotile
009	N/A	N/A	N/A	Trench 11 - ACM9	Cement	Chrysotile, Crocidolite
010	N/A	N/A	N/A	Trench 12 - ACM10	Cement	Chrysotile
011	N/A	N/A	N/A	Trench14 - ACM11	Cement	Chrysotile
012	N/A	N/A	N/A	Surface 1 - ACM12	Debris (AIB, gaskets)	N.A.D.I.S
013	N/A	N/A	N/A	TP01 - ACM1	Debris (AIB, gaskets)	N.A.D.I.S
014	N/A	N/A	N/A	TP02 - ACM1	Debris (AIB, gaskets)	N.A.D.I.S
015	N/A	N/A	N/A	TP02 - ACM2	Rope	N.A.D.I.S
016	N/A	N/A	N/A	TP03 - ACM1	Cement Debris	N.A.D.I.S

CERTIFICATE FOR IDENTIFICATION OF ASBESTOS FIBRES					
Client	BAM Nuttall Ltd	**No. of Samples**	17	**Sample(s) received in lab**	26/07/2024
Site	Hargreaves Street, Victoria, Manchester, M4 4EN	**Surveyed**	26/07/2024 - 01/08/2024	**Samples analysed**	31/07/2024
Sampled by	External	**Sample(s) Taken**	26/07/2024	**Report Date**	01/08/2024
Lab Address	SOCOTEC Asbestos Limited, Wellsyke Road, Adwick le Street, Doncaster, DN6 7DU				

SOCOTEC Sample No	Building	Floor	Location	Material Description	Product Type*	Fibre Type Detected
017	N/A	N/A	N/A	Surface 2 - ACM13	Debris (AIB, gaskets)	N.A.D.I.S

KEY: N.A.D.I.S – No Asbestos Detected in Sample Trace – Asbestos identified in sample at the limit of detection

Analysed by:	**A Beck** (Bulk Analyst)	**Authorised by:**	**N Batchelor** (Lab Supervisor)

Samples of material referenced above have been examined using our internal procedure SCI/ASB/007, based on HSE's HSG248, Asbestos: The Analysts guide for sampling, analysis and clearance procedures. If samples have been DELIVERED, the site address and actual sample location is as given by the client at the time of delivery. SOCOTEC Asbestos Limited is not responsible for the accuracy or competence of the sampling by third parties, and can therefore not be held responsible for any interpretation of the results shown. The Test Report shall not be reproduced except in full without the approval of the inspection body and the client. *Please note that the sample description, material type and comments/observations are opinions and therefore not within the scope of UKAS accreditation. All samples will be retained for a minimum of 6 Months. Form AMSBULK V1 Sept-2020

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Socotec
Geotechnical House
18 - 19 Drome Road
Deeside Industrial Park
Deeside
Flintshire
CH5 2NY

Attention: Chris Evans

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 July 2024
Customer:	Socotec
Sample Delivery Group (SDG):	240723-10
Your Reference:	NOR4025
Location:	Hargrave Street, Manchester
Report No:	736218
Order Number:	211377NOR

We received 8 samples on Monday July 22, 2024 and 8 of these samples were scheduled for analysis which was completed on Tuesday July 30, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

[redacted]

Lauren Ellis

General Manager Western Europe Environmental

1291

CERTIFICATE OF ANALYSIS

SDG: 240723-10 **Report Number:** 736218 **Superseded Report:**
Client Ref.: NOR4025 **Location:** Hargrave Street, Manchester

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30114054	TP01	ES1	0.00 - 0.10	19/07/2024
30114055	TP01	ES2	0.50 - 0.60	19/07/2024
30114056	TP01	ES3	1.80 - 1.90	19/07/2024
30114057	TP02	ES1	0.00 - 0.05	19/07/2024
30114058	TP02	ES2	0.20 - 0.50	19/07/2024
30114059	TP02	ES3	0.50 - 0.80	19/07/2024
30114060	TP03	ES1	0.15 - 0.30	19/07/2024
30114061	TP03	ES2	0.45 - 0.45	19/07/2024

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

CERTIFICATE OF ANALYSIS

SDG: 240723-10 **Report Number:** 736218 **Superseded Report:**
Client Ref.: NOR4025 **Location:** Hargrave Street, Manchester

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			30114054	TP01	ES1	0.00 - 0.10	1kg TUB	S
			30114055	TP01	ES2	0.50 - 0.60	1kg TUB	S
			30114056	TP01	ES3	1.80 - 1.90	1kg TUB	S
			30114057	TP02	ES1	0.00 - 0.05	1kg TUB	S
			30114058	TP02	ES2	0.20 - 0.50	1kg TUB	S
			30114059	TP02	ES3	0.50 - 0.80	1kg TUB	S
			30114060	TP03	ES1	0.15 - 0.30	1kg TUB	S
			30114061	TP03	ES2	0.45 - 0.45	1kg TUB	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X	X	X	X	X	X	X	X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3	X			X				X

CERTIFICATE OF ANALYSIS

SDG: 240723-10 **Report Number:** 736218 **Superseded Report:**
Client Ref.: NOR4025 **Location:** Hargrave Street, Manchester

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP01	TP02	TP03			
			Depth (m)	0.00 - 0.10	0.00 - 0.05	0.45 - 0.45			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	19/07/2024	19/07/2024	19/07/2024			
			Sample Time	.	.	.			
			Date Received	22/07/2024	22/07/2024	22/07/2024			
			SDG Ref	240723-10	240723-10	240723-10			
			Lab Sample No.(s)	30114054	30114057	30114061			
			AGS Reference	ES1	ES1	ES2			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0019 #	<0.001 #	<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #	<0.001 #	<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #	None #	N/A #			
Analysts Comments		TM304		N/A	N/A	None			
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0019 #	<0.001 #	<0.001 #			

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP01ES1 0.00 - 0.10 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114054 TM048	29/07/24	Danielle Duncan	Fibre bundles in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP01ES2 0.50 - 0.60 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114055 TM048	29/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP01ES3 1.80 - 1.90 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114056 TM048	29/07/2024	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP02ES1 0.00 - 0.05 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114057 TM048	29/07/24	Danielle Duncan	Fibre bundles in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP02ES2 0.20 - 0.50 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114058 TM048	29/07/2024	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP02ES3 0.50 - 0.80 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114059 TM048	29/07/2024	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP03ES1 0.15 - 0.30 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114060 TM048	29/07/24	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP03ES2 0.45 - 0.45 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114061 TM048	29/07/2024	Alex Horner	ACM debris in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG: 240723-10 **Report Number:** 736218 **Superseded Report:**
Client Ref.: NOR4025 **Location:** Hargrave Street, Manchester

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP01ES1 0.00 - 0.10 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114054 TM304	None (#)	N/A	0.0019 (#)	<0.001 (#)	0.0019 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP02ES1 0.00 - 0.05 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114057 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP03ES2 0.45 - 0.45 SOLID 19/07/2024 00:00:00 22/07/2024 14:40:00 240723-10 30114061 TM304	N/A (#)	None	<0.001 (#)	<0.001 (#)	<0.001 (#)

Table of Results - Appendix

Method No	Description
TM048	Identification of Asbestos in Bulk Material
TM304	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 240723-10 **Report Number:** 736218 **Superseded Report:**
Client Ref.: NOR4025 **Location:** Hargrave Street, Manchester

Test Completion Dates

Lab Sample No(s)	30114054	30114055	30114056	30114057	30114058	30114059	30114060	30114061
Customer Sample Ref.	TP01	TP01	TP01	TP02	TP02	TP02	TP03	TP03
AGS Ref.	ES1	ES2	ES3	ES1	ES2	ES3	ES1	ES2
Depth	0.00 - 0.10	0.50 - 0.60	1.80 - 1.90	0.00 - 0.05	0.20 - 0.50	0.50 - 0.80	0.15 - 0.30	0.45 - 0.45
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	29-Jul-2024	29-Jul-2024	29-Jul-2024	29-Jul-2024	29-Jul-2024	29-Jul-2024	29-Jul-2024	30-Jul-2024
Asbestos Quantification - Full	30-Jul-2024			29-Jul-2024				30-Jul-2024

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

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

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

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

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

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

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

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

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

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

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

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

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

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

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

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

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

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

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

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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

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