

GEO-ENVIRONMENTAL AUDIT

PHASE 2 Site Investigation & Risk Assessment

PHASE 3 Remediation Statement

Proposed Residential Development

Former Sladen Mill

Littleborough

Rochdale

Author: Daniel Slattery
Client: Mere group
Reference: rep-tjba-mere grp-sladen mill-Phs 2+3 Env-250322.docx

Revision	Date	Reason
0	April 2022	Original.
1	June 2022	Format, remediation statement & Phase 2 descriptions edit. Ex soil analysis edits.
2	Oct 2022	Updated with detailed site history, conceptual model & risk assessment, demolition records.
3	Nov 2022	Minor amendments.
4	Dec 2023	Additional investigations, BHS, water & soil samples after improved access & EA consultation.
5	Feb 2024	Update Preliminary Conceptual Model (sect 1.8), Final Contaminant Risk Assessment (sect 2.4), Final Conceptual Model (sect 2.5), and Remediation Statement (sect 3); to include specific wording of planning condition.

T J Booth Associates.
20A Eastgate St,
Rochdale,
Lancs,
OL16 1DH.
Tel: 01706 868288.
Email: office@tjba.co.uk



CONTENTS:

1.	Introduction & Phase 1 PRA Review.....	3
1.1.	Introduction.	3
1.2.	Proposed Development.	3
1.3.	Detailed Site History.	4
1.4.	Brownfield Solutions Phase 1 Recommendations.	6
1.5.	TJBA Site Reconnaissance – Jan 2021.	6
1.6.	TJBA Site Reconnaissance – May 2021.	6
1.7.	Identification of Source-Pathway-Receptor.	7
1.8.	Preliminary Conceptual Model.....	10
2.	Phase 2 Site Investigations & Risk Assessment.	13
2.1.	Site Investigations.....	13
2.2.	Investigation Summary.	13
2.3.	Site Stratigraphy.	17
2.4.	Final Contaminant Risk Assessment.	17
2.5.	Final Conceptual Model.	23
3.	Phase 3 – Remediation Statement.	26
3.1.	Basic Site Details.....	26
3.2.	Site & Remedial Objectives.	26
3.3.	Conceptual Model (Final) & Relevant Pollution Linkages.	26
3.4.	Recommended Remediation.	26
3.5.	Verification (Phase 4 requirements).	27
3.6.	Additional Notes.....	27
4.	Appendix A: Plans, Figures, Assessments & Certification.....	29
4.1.	Location Plan.	29
4.2.	Proposed Development.	30
4.3.	Site Investigation Plan.	30
4.4.	Rotary Borehole Investigation Log 03.06.2021.	31
4.5.	Trial Hole Investigation Logs 24.03.2022.....	32
4.6.	Trial Hole Investigation Logs 07.03.2023.....	35
4.7.	Trial Hole Investigation Logs 20.07.2023.....	37
4.8.	Borehole Investigation Logs 07.08.2023 - 08.08.2023	39
4.9.	Borehole Investigation Logs 06.10.2023 - 13.10.2023	49
4.10.	Certification - Trial Hole & Soil Sampling Investigation 24.03.2022.....	57
4.11.	Certification - Trial Hole & Preliminary Ground/Surface Water Investigation 20.07.2023.....	66
4.12.	Certification - Borehole & Soil Sampling Investigation 07.08.2023 - 08.08.2023.	72
4.13.	Certification - Soil Sampling Investigation 08.08.2023.....	87
4.14.	Certification - Groundwater Sampling Investigation 22.08.2023 - 07.09.2023.....	93
4.15.	Certification – Borehole & Soil Sampling Investigation 06.10.2023-13.10.2023.....	106
4.16.	Certification - Groundwater Sampling Investigation 19.10.2023 – 20.10.2023.....	123
4.17.	Certification - Ground & Surface Water Sampling Investigation 07.11.2023-09.11.2023.....	135
5.	Appendix B: Site Investigation Photos.....	151
6.	Appendix C: Historic Maps & Supporting Documentation.	160
6.1.	February 2014, Building Notice, ref: 14/00179/DEM, 'Prior notification of proposed demolition of mill' & supporting documentation.....	170
6.2.	2017 Building Notice, ref: DEM/17/0122, 'Demolition of Site Buildings' & supporting documentation.....	178

1. INTRODUCTION & PHASE 1 PRA REVIEW.

1.1. Introduction.

T. J. Booth Associates have been appointed by Mere Development Group to undertake a Phase 2 & 3 Geo-environmental Audit & associated Site investigations & final risk assessment to the former Sladen Mill Site, to support a Town & Country Planning permission for a residential end use.

The Application Site was previously occupied by Alderburgh Ltd, manufacturers of uPVC products for civil engineering applications. Historical records indicate the Site has been used for industrial purposes prior to 1850, with multiple phases of redevelopment being undertaken between then and the present day.

The current pre-development Site comprised predominantly masonry buildings and steel frame/clad warehouses & storage buildings.

Outline planning approval for the Site was granted in October 2015, application, ref No: 18/01235/OUT, for the: 'Outline planning permission for residential development (including access) and demolition of the existing buildings on site'.

A Phase I Preliminary Risk Assessment (PRA) was undertaken by Brownfield Solutions Ltd (BSL) in April 2015 to accompany the application (refer to separate report ref: *JMC/C2740/5117*).

The planning permission notice was granted in June 2018. Condition No.5 on the approval related to land contamination, and is detailed below:

- 5 No development shall take place until an investigation and risk assessment, in addition to any assessment provided with the planning application, has been submitted to and approved in writing by the Local Planning Authority. The assessment shall investigate the nature and extent of any contamination on the site (whether or not it originates on the site). The assessment shall be undertaken by competent persons and a written report of the findings submitted to and approved in writing by the Local Planning Authority before any development takes place. The submitted report shall include:
- i) a survey of the extent, scale and nature of contamination
 - ii) an assessment of the potential risks to:
 - o human health,
 - o property (existing or proposed) including buildings, crops, livestock, pets, woodland, and service lines and pipes,
 - o adjoining land,
 - o groundwaters
 - o water courses to include Greenvale Brook and the canal drain which runs parallel with the eastern boundary of the site
 - o ecological systems,
 - o archaeological sites and ancient monuments;
 - iii) where unacceptable risks are identified, an appraisal of remedial options and proposal of the preferred option(s) to form a remediation strategy for the site. The development shall thereafter be carried out in full accordance with the duly approved remediation strategy and a verification report submitted to and approved in writing by the Local Planning Authority before any of the dwellings hereby approved are first occupied.

Between 2018-2019, the Site buildings were subsequently demolished as part of the planning approval by the previous owners. In 2021 the Application Site was obtained by the current owner.

In June 2021, a reserved matters application, ref: 21/00950/REM was submitted to the Rochdale MBC. This report is to be used to accompany the application and address Condition 5 above from the earlier application.

This report provides a desk-based study & intrusive ground investigation based on current UK guidance for environmental investigation within the construction industry. Principal to the assessment is the potential for contamination pollutant linkages via the CLR-11 source-pathway-receptor methodology. Assessment of potential pollution linkages is undertaken in strict accordance with BS5930:2015, BS 10175:2011+A2:2017, CIRIA C665, and BS 8485:2015+A1:2019 et al.

1.2. Proposed Development.

The proposed development has been revised in the reserved matters application to comprise 25No. residential dwellings. Rochdale MBC have specified changes in the layout as well as insisting on an attenuation pond to the north side of the development.

The Application Site is split into upper and lower parts: The upper part is accessed via an existing lane to the east, and will have 8No. terraced dwellings with associated communal parking area and private gardens. The lower section of the Site will have

17No. detached residential dwellings with private parking/drives & garden areas. This part of the Site will be accessed via a new access road.

Refer to Proposed Site Plan in the Appendix.

1.3. Detailed Site History.

For corresponding mapping, information & supporting documentation, refer to Appendix C under 'Historic Maps & Supporting Documentation' which is ordered according to the following timeline:

1848. Historic records indicate the presence of a mill at this time, albeit smaller than ones that were to be built later in the Site history. The mill was noted as Sladen Mill (Woollen), and structures were nominally central to the lower western part of the Site. There were also additional structures to the north-eastern elevated part of the Site which appear to be separate buildings, perhaps residential cottages, or a farmhouse & outbuildings; and a small mill pond in this area at the top of the access road above & feeding the mill.

The south and west Site perimeter was defined by a watercourse (Castle Brook). A tributary to Castle Brook is noted nominally central to the south boundary (Lydgate Brook).

Off-site there were other mills upstream of the Site including: Wellfield Mill (Fulling) 400m northeast upstream on Castle Brook, and Oil Mill (woollen) 1km south on Lydgate Brook.

1854. The 1850s map shows that the mill noted in 1848 had been demolished & replaced by a substantially larger woollen mill. The new mill was typical of 19th century mill construction in the area and comprised the main weaving/spinning building central to the western part of the Site. There was an associated mill pond (raised bund construction), and chimney to the south side of the main building. An office block was noted to the east side of the main building adjacent to the access road, as well as small mill pond noted in 1848. The former residential farmhouse to the north of the Site is now demolished and replaced by two blocks of what appear to be residential back-to-back cottages named Sladen Mill Fold.

An additional mill, Lydgate Mill (woollen), is noted upstream of the Site (approx 800m southwest) on Lydgate Clough.

1905. The mill retained this layout until it was destroyed by fire c1905. The damage was severe with only the external walls surviving, and all internal floors, machinery, and roofs lost.

c1910. By 1910, the Site is noted as Sladen Mill (Woollen & Cotton), and shows a new mill extension erected on the northwest part of the Site. All building structures in the wider area are hatched in this map, with the old fire damaged section of the mill outline unhatched suggesting the was left as a ruin. Some filter beds were also built to the northwest part of the Site. Sladen Mill Fold remains to the northeast, although the southernmost cottage block appears to have been incorporated into the Sladen Mill complex.

Oil Mill (woollen) 1km south is now disused.

1930. The Application Site is now recorded as Sladen Mill (Cotton Raising & Finishing). Upper mill ponds on the east access road are now removed from Site.

At this time Wellfield Mill was noted as a bleaching & dying mill and Lydgate Mill was still noted as a woollen mill. Oil Mill now partly demolished and noted as terrace cottages.

1950. Maps from this period show the mill works to be concentrated to the north part of the Site. The former mill building central to the Site is now shown to be demolished, with a dotted road between the former mill building outline and a small 'refuse tip' to the southeast Site corner. It is proposed that the refuse tip is formed partly from the demolition material from the former fire damaged mill structure as well as an ash tip, and map features indicate this material is stockpiled on the ground surface beside the access road.

In the wider area, the upstream Lydgate Mill & Wellfield Mill remain shown on maps.

1980. Site remains as above. In the wider area, the upstream Lydgate Mill & Wellfield Mill remain shown on maps.

1985. Site remains as above.

1989-90. The two mill structures to the north side of the lower northwest Site were retained in this period. However, all former buildings to the lower central and south areas were demolished including the remaining parts of the former mill and chimney. At this time a new substation was erected adjacent the watercourse & two new steel-clad warehouses to the south side of the Site. There is also a new warehouse shown to the northeast elevated part of the Site nominally in the position of the former cottages.

In the wider area, the upstream Lydgate Mill was partially demolished and turned into housing. The upstream Wellfield Mill is demolished showing only made ground/filled areas on maps.

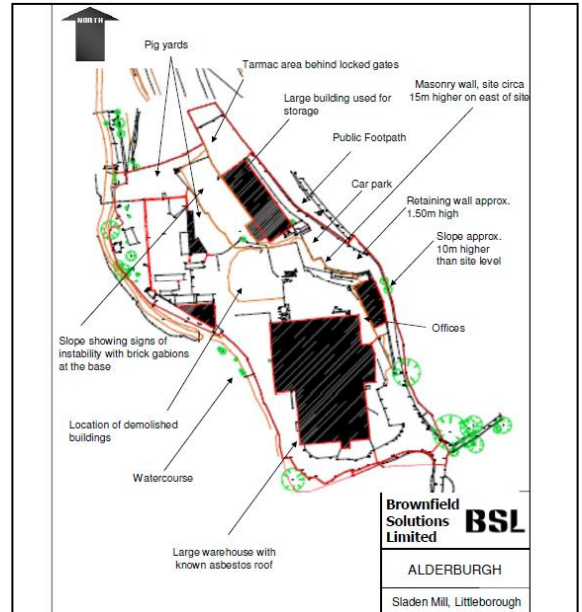
1996. First mention of Alderburgh Ltd associated with the Site. Alderburgh Ltd are a Rochdale based company who are involved in the moulding of plastic products.

2014. The Site remained as above until 2014 when the former boiler house central to it was proposed for demolition under a building notice, ref: 14/00179/DEM, 'Prior notification of proposed demolition of mill'. The former boiler house was known at the time to contain asbestos. Documentation for the demolition is included in the Appendix: Section 80 LABC Building Notice; the C Smith & Sons (Contractor) Method Statement excerpts; and the Dunelm Asbestos Survey Report excerpt. These documents indicate that the asbestos had been surveyed, managed, risk assessed, and removed prior to demolition. The building was subsequently demolished.

2015. An outline planning application for the demolition of all Site buildings, and construction of a residential housing development was submitted in 2015, ref: 18/01235/OUT, for the: 'Outline planning permission for residential development (including access) and demolition of the existing buildings on site'.

As part of the application pack for development, and prior to any further demolition, the Brownfield Solutions Ltd PRA report and associated Site walkover was undertaken. The report detailed the layout and risks to the Site on the BSL Pertinent Site Features & Potential Constraints Plan (see inset image). At the time of the walkover, the Site layout and remaining structures were as follows:

- The warehouses to the south side included an older asbestos cement wall & roof clad storage shed, with a connected and more recent plastisol clad steel shed. These were the buildings that were erected in the late 1980s.
- To the east side was a masonry office block adjacent the access road, which was the original office block built in the 1850s.
- To the northeast (on the elevated part of the Site) was a masonry storage warehouse with asbestos cement sheet panel roof (erected late 1980s).
- To the centre west side of the Site adjacent the watercourse was a masonry building understood to have been used as a control/utility building for Site electrics etc, and is adjacent to the masonry substation to the south side. It was formerly part of the larger masonry mill building erected to the northwest side of the Site in the aftermath of the 1905 fire. At the time of the BSL PRA, the majority of this structure had previously had its roof removed and part of the walls to the southeast corner. The remaining walls and ground slab were left intact, essentially turning it into a walled storage yard.
- In addition to the above, the Site access roads, yards and loading bay remained. No 'natural' ground surfaces remained on-site.



2015-2016. It is estimated that Alderburgh Ltd vacated the Site c2015-2016.

2017. The remaining Site buildings except for the substation & utility part of the former mill to the northwest were proposed for demolition under a building notice, ref: DEM/17/0122, 'Demolition of Existing Buildings'. The buildings were numbered as per the inset image.

Documentation for the demolition is included in the Appendix: Section 80 LABC Building Notice; the C Smith & Sons (Contractor) Method Statement & risk assessment excerpts; as well as the EA hazardous consignment note. An asbestos survey was carried out and referred to in the documentation (ref: S.J.01410).

Building 1 was noted to have an asbestos cement roof, and Building 2 to comprise clad asbestos cement sheet walls & roof. Building 3 was also noted to contain asbestos cement sheeting. Documentation indicates that asbestos had been surveyed, managed, risk assessed, and removed prior to demolition.

2018. Buildings 1, 2, 3 & 4 were subsequently demolished under the above building notice. All materials were separated for recycling and salvage where possible. Remaining demolition material was crushed on-site and stockpiled close to the Site entrance to the south corner of the Site for later removal (supported by photographic evidence in the Appendix C).

2021. The Site was subsequently sold for development to the current owner. The stockpiled demolition crush had been previously removed from Site. A reserved matters application, ref: 21/00950/REM, was submitted to the LPA.



1.4. Brownfield Solutions Phase 1 Recommendations.

The BSL conceptual model identified the following potential pollutant linkages with regards to general ground contamination:

Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk
ON-SITE					
Mill chimney including	Ingestion, direct contact, inhalation of dusts.	End-users	Likely	Medium to Severe	High
Made ground	Ingestion, direct contact, inhalation of dusts.	End-users	Likely	Medium to Severe	High
Made ground from landfill and filter tanks Ground Gas	Migration of gas into confined spaces.	End-users	Likely	Severe	High
Filter tanks	Ingestion, direct contact, inhalation of vapours	End Users	Likely	Medium	Moderate/High
Tanks	Ingestion, direct contact, inhalation of dusts/vapours	End-users	Likely	Medium	Moderate
Substation	Ingestion, direct contact, inhalation of dusts/vapours	End-users	Unlikely	Mild	Very Low

The Brownfield Solutions conceptual model identified the following potential pollutant linkages with regards to controlled waters:

Mill chimney including	Leaching, migration through groundwater or granular soils	Controlled waters	Likely	Severe	High
Made ground	Leaching, migration through groundwater or granular soils	Controlled waters	Likely	Severe	High
Tanks	Leaching, migration through groundwater or granular soils	Controlled waters	Likely	Medium	Moderate
Substation	Leaching, migration through groundwater or granular soils	Controlled waters	Unlikely	Mild	Very Low

The current Site owner and T J Booth Associates became involved with the Site in 2021, when the demolition had been completed and the associated pollutant sources such as the tanks/chimney/old mills had been removed. Due to this, many of the contaminant sources in the conceptual model would remain as residual risk in the existing Site made ground.

1.5. TJBA Site Reconnaissance – Jan 2021.

A brief reconnaissance was undertaken regarding coal mining legacy. Coal adits were noted in the west bank of the river (opposite the Site), and have been added to the Site Investigation Plan.

1.6. TJBA Site Reconnaissance – May 2021.

Details of Existing Structures:	Upper northeast Site corner: The upper part of the Site comprised a macadam access rd/car park/unmade yard area (~80%), and a concrete ground slab to the former warehouse (~20%). A retaining wall supported this part of the Site and access road from the lower Site, and was made up of a mix of concrete & masonry walls, and rough steep inclined earth banks.
---------------------------------	---

	Lower part of the Site (northwest to south): At the time of the Site reconnaissance, all buildings apart from the electricity substation, and associated former mill utility building to the north side had been demolished. All slabs and other structures had been removed, apart from the former mill walls which act as retaining walls to the adjacent lane (east side). The macadam access track around the south and west of the Site boundary, immediately adjacent the neighbouring watercourse remained.
Adjacent Properties:	The Site is in a steep sided river valley. The only buildings in the local area are either off-site farmhouses or agricultural and commercial buildings.
Water Levels, Directions of Flow and Rates in Rivers:	Castle Brook flows past the south and west boundary of the Site ultimately flowing north. Castle Brook has a tributary, which shares a confluence with Lydgate Brook nominally central to the south boundary.
Areas of Discoloured Soil, Polluted Water, Vegetation, and Significant Odours:	The Site was generally cleared of structures (apart from those noted above) and comprised a made ground surface which had been locally reprofiled awaiting construction.
Other comments:	Coal seam adits were noted in the west bank of the river (opposite the Site), and have been added to the Site Investigation Plan.

1.7. Identification of Source-Pathway-Receptor.

1.7.1. Summary & Discussion.

Risks in the PRA were built around sources in the former & historic Site buildings/structures/storage tanks, most of which have been removed from Site.

With regard to the recent demolition processes, many of the inert materials have been recycled such as usable brick, stone, slate, steel & timbers etc. Specific sources of hazardous materials such as asbestos etc, were removed prior to demolition. Remaining building materials that are not classified as hazardous, but that may have low level contaminants including plasters/mortars/hardstanding planings / ash, as well as other materials that couldn't be reclaimed directly such as broken brick/stone, concrete, glass & slate; were all crushed into usable materials and transported off Site.

The BSL PRA report considered specific historic parts of the Site and the associated risk into a conceptual model. However, since T J Booth Associates have undertaken a detailed history of the Site, some of these risks are considered to have been removed, mitigated, or contained now within other present 'sources' such as the existing & historic made ground profile. The discussion of the BSL conceptual model sources is indicated below:

General Made ground. There is a risk from existing phases of construction, demolition, fire, & infilling now contained within the general made ground.

Chimney & Mill. The mill chimney was demolished c1985 when the south side of the Site was redeveloped. Any contaminative material, (most likely PAH & metals from demolition material and ash), will now only be found as residual elements in the existing made ground. Regarding ash in particular – the inclusion of a 'refuse tip' to the north side of the Site is a likely candidate location for disposal, which is more often the case than not on mill sites.

Much of the historic mill structure demolished before c1985, could have been used to raise levels historically, and if so, are likely to contribute low level contamination to on-site made ground. Asbestos materials from the 1980s built mill buildings prior to demolition was removed from Site. However, there may be some residual dust from all activities in the upper made ground, and deeper contamination from historic demolition & infilling.

Made ground from refuse & filter tanks. The original report indicates a 'landfill' on-site. However, historic records indicate the 'refuse tip' between the 1950s & 1980s mapping was likely in part, demolition material from the former 1850s woollen mill, which was demolished and stored near the Site entrance above the existing ground profile as evidenced by map contours/features. Not only would this material have been inert, but the stockpiled position above the ground surface mitigates the risk (from a gas risk perspective). As indicated above, ash is also likely in this location.

Filter beds. The filter beds are to the northern most part of the Site. The tanks were relatively small, brick built with concrete base and possibly contained ash or similar material as a filter medium. Where ash does contain contaminants of concern, ash itself is relatively stable and contaminants generally immobile. The filter tanks have not been used for c40 years and appear now to be partially infilled.

Tanks. Tanks were noted on historic plans nominally to the centre northwest. The fact that the tanks were noted on maps suggests these were above ground features which were historically removed from Site prior to 1930. No other tanks are noted on Site after this date, and none were noted in the BSL PRA Site walkover. Any residual risk from former tanks will only be found in the made ground profile and associated contaminants are expected in this location.

Substation. The Site substation was built in the late 1980s and is unlikely to contain hazardous PCBs etc, banned prior to construction.

External landfill Sites. There are three landfill Sites noted within the Brownfield Solutions data search: Sladen Bridge 115m west, inert fill; Greenvale 185m northwest, inert fill; and Wellfield Mill 325m northeast, inert & industrial fill. Of the two Sites that are within 250m of the development, Sladen & Greenvale are at much higher level than the Application Site and therefore the pathway does not exist.

General conclusions. Due to the above reasoning, the existing on-site historic made ground will have to be assessed in accordance with the risks identified, with the associated contaminants of concern, and in targeted & random locations.

Subsequent discussion with the Environment Agency has highlighted the emerging group of contaminants such as persistent organic pollutants (POPs), and in particular per/polyfluoroalkyl substances (PFAS), especially when considering former industrial sites with a history of manufacturing textiles, plastics and waterproof coatings.

Two specific PFAS substances are currently regulated in the UK due to studies highlighting adverse effects on humans & animals at high exposure levels: perfluorooctanoic acid (PFOA), and perfluorooctane sulfonic acid (PFOS).

Controlled waters such as the underlying aquifers & watercourse surrounding the Site can be considered pathways which chemicals of concern can move through or to, affecting end use receptors such as humans, as well as surface water biota & associated habitats.

There is no registered superficial aquifer locally, and the bedrock aquifer designation is Secondary A (permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers).

The Site is not in a Drinking Water Protected Area (Surface Water), nor a Drinking Water Safeguard Zone (Surface Water).

The Site is not in a Drinking Water Safeguard Zone (Groundwater); the closest Source Protection Zone is approximately 7km southwest of the Application Site.

There are no groundwater abstraction licences within 811m of the Site, and the closest are as follows:

- 811m west relating to a point source brick lined catchpit (general use) on the opposite (western side) of the Roch Valley/separate catchment area.
- 1372m north relating to a point source spring (general use) on the opposite (western side) of the Roch Valley/separate catchment area, and at higher elevation.
- 1495m north relating to a point source spring (general use) on the opposite (western side) of the Roch Valley/separate catchment area, and at higher elevation.
- 1773m south relating to a point source borehole (drinking & general use) on the separate Ealees Brook minor catchment area, and at higher elevation.

1.7.2. Potential Contaminants.

CURRENT SOURCE/S	ORIGINAL ASSOCIATED SOURCE	CONTAMINANT/S
Existing historic made ground – exists across the Site from multiple phases of historic demolition & construction.	Mill & chimney demolition materials, mortars & plasters, cladding, heat resistant fixings/fittings/insulation, other material such as hardcore & planings etc.	Metals, PAHs, sulphates, asbestos.
	Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.
	Former mill ponds – potential for infill.	Metals, PAHs, CH ₄ , CO ₂ .
	Landfill (refuse heap) & filter tanks.	Metals, PAHs, CH ₄ , CO ₂ .
	Historic industrial processes.	PFAS.
	Substation.	PCBs.
Site geology.	Existing Namurian and Coal Measures formations.	Radon (Rn).
	Coal seams	CH ₄ , CO ₂ .



1.7.3. Potential Pathways.

The potential pathways to/from the Development Site include (not an exhaustive list but a summary of the main points):

PATHWAY	MEDIA
Soil and dust ingestion	Soil and indoor dust
Consumption of home-grown fruit and vegetables	Produce
Skin contact (indoors)	Indoor dust
Skin contact (outdoors)	Soil
Inhalation of dust (indoors)	Air
Inhalation of dust (outdoors)	Air
Vapours (indoors)	Air
Vapours (outdoors)	Air
Controlled waters	Groundwater, surface waters

1.7.4. Potential Receptors.

Receptors mainly comprise human (workers) in the construction phase, and human (residential) for the proposed end use.

Existing human exposure in the wider area & river biota.

1.8. Preliminary Conceptual Model.

Current source/s		Original associated usage / location / source	Contaminant type	Pathway	Receptor	Pollution linkage	Consequence	Probability	Risk
CHEMICAL (SOLID)	Existing made ground - surface/sub-soil.	Mill & chimney demolition materials, mortars & plasters, cladding, heat resistant fixings/fittings/insulation , other material such as hardcore & planings etc.	Metals, PAHs, asbestos.	Direct ingestion, aerial ingestion, dermal contact, drinking water. Crops. Water pipes/services.	Primarily human - Site construction operatives & future residential Site occupants. Pets. Ecological systems.	There are multiple phases of historical demolition, fires, and placement of historical made ground, as well as the potential for degradation of asbestos cladding sheet etc, and although it was in situ externally, it could now be in place in the upper made ground profile.	Medium.	High likelihood.	High risk.
		Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.			Historical records noted on-site tanks, which due to inclusion on the maps, must have been above ground, although there were no tanks recorded in the Site walkover. Any historical spills would now be evident in the Site made ground in localised areas.			
		Former mill ponds – potential for infill.	Metals, PAHs, asbestos.			Photographic evidence suggests the mill ponds were primarily above ground storage structures & small in area. However, concerning dry chemical contamination particularly, the former pond areas are likely to comprise the same contamination as the rest of the Site.			
		Landfill (refuse heap) & filter beds.	Metals, PAHs, asbestos.			The refuse heap is assumed to comprising the demolition rubble from the former woollen mill built in the 1850s, as well as ash from on-site processes. Although considered inert from a gas risk perspective, the source is likely to comprise chemical contamination & potential to have been spread over the Site locally.			
		Substation.	PCBs.			Substation construction was post-ban on PCBs so source is considered mitigated.			
		Former buildings, fill, mortars & plasters.	Sulphates.	Contact with underground structures.	Building structures /concrete. Archaeologic al sites & ancient monuments	Potential for sulphates in the soil, which could leach into groundwater and negatively impact existing or proposed foundations.	Minor.	Likely.	Low risk.
GROUND GAS RISK	Geological ground gas.	Coal seams from Coal Measures.	CH4, CO2, other trace gases.	Diffusion through permeable soil/subsoil,	Human - future residential Site	There are potential coal seams beneath the Site, according to BGS maps. A separate coal mining risk assessment has concluded that shallow coal seams do not underly the Site & therefore risks are mitigated. It was approved by the Coal Authority.	Medium.	Unlikely.	Low risk.

		Radon sources in Namurian deposits.	Rn.	building substructures, aerial inhalation.	occupants. Explosion, suffocation.	The Site is within a 5-10% radon potential area classed as medium risk and a gas membrane will be required in the construction of foundations/slab.	Medium.	Likely.	Moderate risk.
	Anthropogenic ground gas sources.	Refuse heap.	CH ₄ , CO ₂ , other trace gases.			The refuse heap is assumed to comprise the demolition rubble from the former woollen mill built in the 1850s, as well as ash from on-site processes. The inert waste was stockpiled & stored above ground mitigating any risks.	Mild.	Unlikely.	Very low risk.
		Filter tanks				Former filter tanks to the northwest corner of the Site were small in area, and open structures which generally comprise ash as a filter medium. The tanks have been disused for approximately 40years due to a pump house being incorporated into the Site.			
		Former mill ponds.				Unlikely to contribute to ground gas generation. Mill ponds were small, and photographic evidence indicates these structures were banded/above ground.			
CHEMICAL (LIQUID)	Groundwater r/ surface water.	Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.	Controlled Waters: specifically groundwater & aquifers.	Human - future residential Site occupants, user in the wider area. Pets. Ecological systems. Adjoining land /woodland.	There is not considered to be a pollutant linkage regarding groundwater/aquifers and subsequent human receptors for the following reasons: - The Site is not in a Drinking Water Protected Area (Surface Water), nor a Drinking Water Safeguard Zone (Surface Water). - The Site is not in a Drinking Water Safeguard Zone (Groundwater); the closest Source Protection Zone is approximately 7km southwest of the Application Site. - There are no groundwater abstraction licences within 250m of the Site, and more distant extractions are not at risk due to lack of pathway at the locations.	Medium.	Unlikely.	Low risk.
		Mill & chimney demolition materials, mortars & plasters, other material such as hardcore & planings etc.	Metals, PAHs.						
		Former industrial processes.	PFAS – PFOA & PFOS.						
		Former buildings, fill, mortars & plasters.	Sulphates.		Building structures /concrete. Archaeological sites & ancient monuments	Potential for sulphates in the groundwater, which could negatively impact existing or proposed foundations.	Minor.	Likely.	Low risk.
		Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.	Controlled Waters: specifically surface waters such as Greenvale Brook	Aquatic habitats & biota. Ecological systems.	There is a potential pollutant linkage that the relative contaminant source may have made its way into the ground profile, and subsequently from ground to surface water pathways where it can reach surface water biota receptors.	Mild.	Likely.	Moderate to low risk.
		Mill & chimney demolition materials, mortars & plasters, other	Metals, PAHs.						

		material such as hardcore & planings etc.		& the Canal Drain.	Adjoining land /woodland.				
		Former industrial processes.	PFAS – PFOA & PFOS.						

2. PHASE 2 SITE INVESTIGATIONS & RISK ASSESSMENT.

2.1. Site Investigations.

2.2. Investigation Summary.

Below is a timetable of the investigations undertaken to date:

Date	Company	Report Reference	Investigation Type	Sample Suite	Investigation/Sample ID
06.05.2021	TJBA	n/a	coal workings recce	n/a	adits
03.06.2021	TJBA/DANBAR	Sladen Mill BH Log	borehole (rotary)	n/a	BH1
24.03.2022	TJBA	n/a	trial holes	n/a	THs 1-10
24.03.2022	TJBA	22-11596-2	soil samples	general suite	S1-S10
24.03.2022	TJBA	22-12266-1	soil samples	general suite	S8
07.03.2023	TJBA	n/a	trial holes	n/a	THs 11-15
20.07.2023	TJBA	n/a	trial holes	n/a	THs 16-18
20.07.2023	TJBA	23-07360-1	groundwater samples	general suite	GWS1-3
20.07.2023	TJBA	23-07360-1	river samples	general suite	WS1-3
07-08.08.2023	SUBSURFACE	7782 Factual Report - 4.10.23	boreholes (mini percussive)	n/a	M1-M8
08.08.2023	SUBSURFACE	23-20667	soil samples	general suite	M1 - M8 - 2.0m
08.08.2023	TJBA	23-07983-1	soil samples (WAC)	WAC & general suite	WAC#S1-2
22.08.2023	SUBSURFACE	23-20666	groundwater samples	general suite	M1, M2, M3, M4, M6, M8
07.09.2023	SUBSURFACE	230907-56-MCERTS-COMPLETE-2023-09-12	groundwater samples	PFAS	M1, M2, M3, M4, M6, M8
06.10.2023	SUBSURFACE	7782A GROUND INVESTIGATION RPRT 29.11.23	boreholes (mini percussive)	n/a	M9, M10, M11, M12, M14
06.10.2023	SUBSURFACE	23-24776	soil samples	general suite	M9 - M12, M14
13.10.2023	SUBSURFACE	7782A GROUND INVESTIGATION RPRT 29.11.23	borehole (mini percussive)	n/a	M13
13.10.2023	SUBSURFACE	23-25441	soil samples	general suite	M13
19.10.2023	SUBSURFACE	23-24926	groundwater samples	general suite	M9/WSH9, M10/WSH10, M14/WSH14
20.10.2023	SUBSURFACE	231020-53-MCERTS-COMPLETE-2023-11-02	groundwater samples	PFAS	M9/WSH9, M10/WSH10, M14/WSH14
07.11.2023	SUBSURFACE	23-26479	groundwater samples	general suite	M1, M2, M3, M4, M6, M9, M10, M14
07.11.2023	SUBSURFACE	23-26479	river samples	general suite	WS4, WS5, WS6, WS7
09.11.2023	SUBSURFACE	231109-61-MCERTS-COMPLETE-2023-11-24	groundwater samples	PFAS	M1, M2, M3, M4, M6, M9, M10, M14
09.11.2023	SUBSURFACE	231109-61-MCERTS-COMPLETE-2023-11-24	river samples	PFAS	WS4, WS5, WS6, WS7

2.2.1. Rotary Borehole Investigation (Coal) 03.06.2021.

Site investigations were undertaken to identify the stratigraphy of the underlying coal measures & confirm the presence/absence of coal seams. The investigation comprised a single borehole (BH1), and was located in the central area of the Site to the E side of a fault line passing NNW – SSE through the area.

Due to the predicted absence of coal seams/workings and the remote location, the use of air flushed open hole drilling was selected for speed and economy.

The surface arisings and drill progress rate were used to establish the rock type and hardness.

The borehole identified no coal seams beneath the Site, and the results have been included in a separate Coal Mining Risk Assessment subsequently approved by the Coal Authority.

No risk to the Site is understood to remain due to coal mining legacy.

The borehole log is appended.

2.2.2. Trial Hole & Soil Sampling Investigation 24.03.2022.

Site investigations were undertaken by T J Booth Associates with a 13t back acting excavator, and comprised 10No. machine excavated trial holes (THs 1-10).

Trial holes were located around the Site to gain an understanding of the geology for future foundation design, and also located in and around particular former source areas noted in historic data search, such as former tanks, ponds, and refuse heaps.

Regarding these areas in particular; TH1 was located in the old refuse heap, TH3 in the location of the historic mill pond, and trial holes TH6, TH7 & TH8 in and around the location which the former tanks were situated.

Made ground across the Site generally comprised historic fill made up of coarse brick/stone/concrete fill in a finer clayey/silty and occasionally sand & gravel matrix. It is assumed this fill was historically imported to Site to build up levels as required, or used to infill (cut & fill) as successive phases of the mill & associated buildings were demolished throughout its evolution.

At the location of the historic reservoir, trial hole TH3 revealed no exceptional fill type or depth varying from the general Site make-up. Exceptions to the general site-wide made ground were:

- TH1 around the old refuse tip. Made ground comprised predominantly of gravel & sand sized brick, stone, glass & ash.

- TH4 around the location of the historic part of the mill. Depths in excess of 4m of brick & stone rubble fill was noted without reaching bedrock noted everywhere else across the Site. The depth is assumed to be due to basements within the historic mill dating back to & built in the 1850s.
- TH7 to the northwest corner of the Site (lower site) noted hydrocarbon contamination at depth which appeared to be local only. No visual or olfactory evidence of contamination was noted in either TH6 or TH8, both close by. The location is of TH7 was local to the former tanks.

Soil sampling was also undertaken in each of the trial holes, and 10No. soil samples (S1-10) were taken representative of the made ground horizons to assess the potential ground contamination both in specific locations identified above, and also to get general background contamination levels across the Site.

Samples were analysed for metals, speciated PAH, inorganics & sulphates, SOM, & asbestos screening in accordance with the conceptual model. Further hydrocarbon TPH(CWG) & BTEX analysis was undertaken in TH7 around the local of the former tanks, and in locations where hydrocarbons were suspected.

The trial hole logs & soil sample certification are appended.

2.2.3. Trial Hole Investigation 07.03.2023.

Site investigations were undertaken by T J Booth Associates with a 13t back acting excavator, and comprised a further 5No. machine excavated trial holes (THs 11-15).

The trial holes were located adjacent to the existing access road/lane adjacent to the east side retaining walls, and were undertaken primarily to assess the retaining wall foundation positions & depths; but to also give further insight into geo-environmental aspects of the fill in this location.

In particular, trial holes 11, 12, 13 were located within the former 'refuse tip' area with trial hole 14 just on the boundary. A loose sand & gravel made ground (sand & gravel of brick, stone, concrete, ash) was noted confirming earlier investigations that the fill in this area is generally inert demolition fill.

Trial hole 15 was a shallow excavation down the face of the embankment between the upper and lower Sites (north), which confirmed interbedded sandstone and mudstone (general Coal Measures).

The trial hole logs are appended.

2.2.4. Trial Hole & Preliminary Ground/Surface Water Investigation 20.07.2023.

Site investigations were undertaken by T J Booth Associates with a 13t back acting excavator, and comprised a further 3No. machine excavated trial holes (THs 16-18).

The trial holes were located adjacent/close to the west Site boundary with the watercourse (nominally upstream to downstream) to assess the ground conditions close to the watercourse and take preliminary groundwater samples.

The trial holes recorded stratigraphy similar to previous trial holes close to the watercourse – nominally clayey rubble MADE GROUND on top of SAND & GRAVEL, over mudstone BEDROCK.

Preliminary groundwater samples (GWS1-3) were taken in each trial hole.

Surface water samples (WS1-3) were also taken in the watercourse, downstream, at a midpoint, and at the confluence with Lydgate Brook.

The trial hole logs and water sample certification are appended.

2.2.5. Borehole & Soil Sampling Investigation 07.08.2023 - 08.08.2023.

Site investigations were undertaken by Subsurface Ltd using a Dart Mini Sampling Rig fitted with windowless sample tubes. The investigations comprised 8No. mini boreholes (M1-8) to depths of between 2.00 and 4.00 metres. The boreholes were specified to be taken down through any made ground horizons & virgin superficial cover to bedrock.

On completion the mini boreholes were converted to standpipes, and installed with 50mm HDPE pipe with a geotextile membrane surrounding the slotted sections. The standpipes were then surrounded by filter gravel in the slotted sections of the standpipe and capped off with a bentonite seal. A metal flush cover was installed to ground level over the standpipe using concrete.

Soil sampling (24No.) was also undertaken in each of the boreholes, nominally at change in strata/depth as tabulated below:

Borehole/Standpipe No.	Total Depth (m)	Response Zone (m)	Soil Sample Depths (m)
M1	2.80	1.00-2.80	M1 - 1.2m, M1 - 2.0m, M1 - 2.6m, M2 - 1.2m
M2	3.00	1.00-3.00	M2 - 2.0m, M2 - 3.0m
M3	3.00	1.00-3.00	M3 - 1.2m, M3 - 2.0m

M4	2.70	1.00-2.70	M4 - 1.2m, M4 - 2.0m, M4 - 2.7m
M5	4.00	1.00-4.00	M5 - 1.2m, M5 - 2.0m, M5 - 3.0m, M5 - 3.75m
M6	4.00	1.00-4.00	M6 - 1.2m, M6 - 2.0m, M6 - 3.0m, M6 - 3.7m
M7	2.80	1.00-2.80	M7 - 1.2m, M7 - 2.0m, M7 - 2.6m
M8	2.00	1.00-2.00	M8 - 1.2m, M8 - 2.0m

Samples were analysed for metals, speciated PAH, inorganics & sulphates, SOM, asbestos screen/quantification (as required), and hydrocarbon TPH(CWG) & BTEX in accordance with the conceptual model.

The borehole logs & soil sample certification are appended.

2.2.6. Soil Sampling Investigation 08.08.2023.

Soil sampling was undertaken by T J Booth Associates and comprised some minor sampling for waste acceptance criteria (WAC) to enable the tendering process regarding proposed earthworks.

2No. soil samples were taken of upper made ground to the north of the Site, and samples are as follows:

- WACS1 Dense dark brown very gravelly silty sand MADE GROUND. Gravel is brick, concrete, macadam.
- WACS2 Medium dense dark brown gravelly silty sand MADE GROUND. Gravel is brick, concrete, macadam.

For reference, the samples tested below the inert landfill thresholds for all relevant determinands, apart from TOC which was noted to trigger the inert landfill threshold.

The samples were also analysed for metals, speciated PAH, inorganics, SOM, & asbestos screening in accordance with the conceptual model.

The soil sample (contamination) certification is appended.

2.2.7. Groundwater Sampling Investigation 22.08.2023 - 07.09.2023.

Groundwater sampling was undertaken by Subsurface Ltd on borehole standpipes (M1-8).

A summary of groundwater levels recorded during monitoring visits are tabulated below:

Borehole/Standpipe No.	Standpipe Depth (m)	Response Zone (m)	Depth to Groundwater (m)
M1	2.80	1.00-2.80	0.40
M2	3.00	1.00-3.00	1.80
M3	3.00	1.00-3.00	1.54
M4	2.70	1.00-2.70	2.11
M5	4.00	1.00-4.00	Unable to locate
M6	4.00	1.00-4.00	2.62
M7	2.80	1.00-2.80	DRY
M8	2.00	1.00-2.00	1.57

6No. samples of groundwater taken from the standpipes installed in M1, M2, M3, M4, M6 and M8.

Contamination analyses were specified as: pH, sulphate, sulphide, cyanide, arsenic, boron (soluble), cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, speciated TPHs, the speciated PAHs suite, the BTEX suite and phenols, PFOS and PFOA.

Limited groundwater was noted in M3, M4, and M8, and so reduced contamination analysis was undertaken.

M5 could not be located by the contractor at the time of sampling, and M7 was dry, so no groundwater sampling and subsequent analysis was undertaken on these borehole/standpipes.

The groundwater certification is appended.

2.2.8. Borehole & Soil Sampling Investigation 06.10.2023-13.10.2023.

Site investigations were undertaken by Subsurface Ltd using a Dart Mini Sampling Rig fitted with windowless sample tubes. The investigations comprised a further 6No. mini boreholes (M9-14) to depths of between 2.00 and 4.00 metres. The boreholes were specified to be taken down through any made ground horizons & virgin superficial cover to bedrock.

On completion the mini boreholes were converted to standpipes, and installed with 50mm HDPE pipe with a geotextile membrane surrounding the slotted sections. The standpipes were then surrounded by filter gravel in the slotted sections of the standpipe and capped off with a bentonite seal. A metal flush cover was installed to ground level over the standpipe using concrete.

Soil sampling (16No.) was also undertaken in each of the boreholes, nominally at change in strata/depth as tabulated below:

Borehole/Standpipe No.	Total Depth (m)	Response Zone (m)	Soil Sample Depths (m)
M9	2.40	1.00-2.40	M9 - 1.2m, M9 - 2.0m
M10	2.00	1.00-2.00	M10 - 1.2m, M10 - 1.8m
M11	1.40	0.50-1.40	M11 - 0.3m,
M12	4.00	1.00-4.00	M12 - 1.2m, M12 - 2.2m, M12 - 3.7m
M13	4.00	1.00-4.00	M13 - 1.0m, M13 - 1.6m, M13 - 2.5m, M13 - 3.5m
M14	4.00	1.00-4.00	M14 - 1.4m, M14 - 1.8m, M14 - 2.4m, M14 - 3.7m

Samples were analysed for metals, speciated PAH, inorganics & sulphates, SOM, asbestos screen/quantification (as required), and hydrocarbon TPH(CWG) & BTEX in accordance with the conceptual model.

The borehole logs & soil sample certification are appended.

2.2.9. Groundwater Sampling Investigation 19.10.2023 – 20.10.2023.

Groundwater sampling was undertaken by Subsurface Ltd on borehole standpipes (M9-14).

A summary of groundwater levels recorded during monitoring visits are tabulated below:

Borehole/Standpipe No.	Standpipe Depth (m)	Response Zone (m)	Depth to Groundwater (m)
M9	2.40	1.00-2.40	1.71
M10	2.00	1.00-2.00	0.65
M11	1.40	0.50-1.40	1.30
M12	4.00	1.00-4.00	DRY
M13	4.00	1.00-4.00	DRY
M14	4.00	1.00-4.00	2.82

3No. groundwater samples were taken from the following standpipes: M9, M10, and M14.

Contamination analyses were specified as: pH, sulphate, sulphide, cyanide, arsenic, boron (soluble), cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, speciated TPHs, the speciated PAHs suite, the BTEX suite and phenols, PFOS and PFOA.

Limited groundwater was noted in M9 & M14, and so reduced contamination analysis was undertaken.

M12 & M13 were dry, and there was not enough groundwater in M11, and no groundwater sampling and subsequent analysis was undertaken on these borehole/standpipes.

The groundwater certification is appended.

2.2.10. Ground/Surface Water Sampling Investigation 07.11.2023-09.11.2023.

Groundwater sampling was undertaken by Subsurface Ltd on borehole standpipes (M1-14).

A summary of groundwater levels recorded during monitoring visits are tabulated below:

Borehole/Standpipe No.	Standpipe Depth (m)	Response Zone (m)	Depth to Groundwater (m)
M1	2.80	1.00-2.80	0.05
M2	3.00	1.00-3.00	1.46
M3	3.00	1.00-3.00	1.80
M4	2.70	1.00-2.70	2.90
M5	4.00	1.00-4.00	Unable to locate
M6	4.00	1.00-4.00	2.32

M7	2.80	1.00-2.80	DRY
M8	2.00	1.00-2.00	Submerged
M9	2.40	1.00-2.40	0.34
M10	2.00	1.00-2.00	0.59
M11	1.40	0.50-1.40	DRY
M12	4.00	1.00-4.00	DRY
M13	4.00	1.00-4.00	DRY
M14	3.00	1.00-4.00	2.30

8No. groundwater samples were taken from the following standpipes: M1, M2, M3, M4, M6, M9, M10, and M14.

Contamination analyses were specified as: pH, sulphate, sulphide, cyanide, arsenic, boron (soluble), cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, speciated TPHs, the speciated PAHs suite, the BTEX suite and phenols, PFOS and PFOA.

M5 wasn't located, M7 & M11-M13 were dry, and M8 was submerged, and so these boreholes were unable to be sampled.

Due to the lack of water in M14, reduced testing was undertaken.

Surface water samples (WS4-7) were also taken in the watercourse, downstream, at a midpoint, at the confluence with Lydgate Brook, and upstream of the Application Site.

The ground & surface water certification is appended.

2.3. Site Stratigraphy.

Following on from Site investigations, the made ground profile, superficial & bedrock depths have been identified.

Generally, the Site is covered with between 1-3m of historic made ground generally comprising inert fill made up of coarse brick, stone, slate, glass, with other inclusions such as concrete/mortars etc; generally all contained within a finer clayey/silty and occasionally sand & gravel matrix. The general exception to this is around the former 'refuse tip' area which comprises sand/sand & gravel sized ash. It is assumed the fill was either historically imported to Site to build up levels, or used to infill as successive phases of the mill & associated buildings were demolished throughout its evolution.

The investigations have also delineated the bedrock types, generally comprising a light brown sandstone lithology to the east, becoming overlain by dark grey/black mudstone nominally to the centre of the Site.

UPPER SITE: The upper level of the Site (northeast area) was generally underlain by approximately 1m of made ground, a thin band of silt to approximately 1.4m, and sand & gravels to 2.5m with weathered bedrock below.

LOWER SITE: Site investigations have shown that the lower part of the Site is underlain by approximately 1-2.5m of made ground (south area), generally directly on top of weathered bedrock. This increases to approximately 3m depth in the north section. Below the made ground in the north section and close to the river in the southwest section (only adjacent to the watercourse) is approximately 1m of coarse flood gravel deposits on top of weathered bedrock.

2.4. Final Contaminant Risk Assessment.

2.4.1. Human Health.

2.4.1.1. Shallow soil contamination.

Samples were analysed for metals, speciated PAH, inorganics & sulphates, SOM, asbestos screen/quantification (as required), and hydrocarbon TPH(CWG) & BTEX in accordance with the conceptual model.

On return, soil samples were assessed by TJ Booth Associates to common threshold comparison data, specifically the Defra Category 4 Screening Levels (C4SLs), then to LQM/CIEH (S4ULs).

All contaminants of concern that tested above threshold levels are identified in the table below:

Lab Job No:	22-11596	22-11596	22-11596	22-11596	22-11596	22-11596	22-12266	22-11596	22-11596	23-20667	23-20667	23-20667	23-20667	23-20667	23-20667	23-20667	23-20667	23-20667	23-24776	23-24776	23-24776	23-24776	23-25441-0	23-25441-0	
TJBA Sample ID:	S1	S3	S4	S5	S6	S7	S8	S9	S10	M2	M2	M3	M4	M5	M5	M5	M6	M6	M9	M10	M14	M14	M13	M13	
Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Depth:	0.5	0.5	0.5	0.5	0.5	0.5	2.5	0.5	0.5	2	3	1.2	1.2	1.2	2	3	1.2	2	2.00	1.2	1.35	1.8	1.61	2.47	
Date:	24.03.22	24.03.22	24.03.22	24.03.22	24.03.22	24.03.22	24.03.22	24.03.22	24.03.22	07.08.23	07.08.23	07.08.23	07.08.23	07.08.23	07.08.23	07.08.23	07.08.23	07.08.23	06.10.23	13.10.23	13.10.23	13.10.23	13.10.23	13.10.23	
Analyte	Units																								
Arsenic as As, dry weight	mg/kg	66.00	15.00	10.00	11.00	14.00	13.00		17.00	21.00	8.50	14.00	20.00	9.40	36.00	21.00	45.00	14.00	11.00	94.00	44.00	12.00	6.70	9.20	10.00
Lead, as Dry Weight	mg/kg	70.00	170.00	170.00	3900.00	220.00	110.00		27.00	29.00	37.00	50.00	190.00	210.00	240.00	220.00	260.00	100.00	120.00	1100.00	190.00	190.00	68.00	110.00	120.00
Nickel as Ni, dry weight	mg/kg	56.00	25.00	20.00	24.00	22.00	21.00		43.00	49.00	35.00	22.00	24.00	22.00	27.00	22.00	22.00	22.00	13.00	79.00	46.00	21.00	400.00	25.00	25.00
Asbestos quantification	%	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.011	0.003	0.007	0.000	0.290	0.002	0.002	0.002	0.004	0.018	0.002	0.002	0.580	0.007	0.001
benzo[a]anthracene	mg/kg	2.70	0.88	4.90	0.10	1.50	7.80		3.30	1.10	2.20	0.10	0.10	0.30	0.20	0.60	0.10	0.80	0.30	0.10	0.80	0.40	0.20	63.00	8.30
benzo[a]pyrene	mg/kg	1.40	0.73	8.30	0.10	1.20	8.40		3.10	0.89	2.10	0.10	0.30	0.20	0.20	0.60	0.10	0.70	0.30	0.10	1.10	0.60	0.50	53.00	7.40
benzo[b]fluoranthene	mg/kg	1.80	1.20	8.00	0.10	0.99	9.40		3.50	1.60	1.70	0.10	0.30	0.50	0.20	0.50	0.10	0.60	0.30	0.10	0.70	0.30	0.40	42.00	6.80
chrysene	mg/kg	3.10	1.20	5.80	0.10	1.60	9.00		3.90	1.00	2.10	0.10	0.10	0.30	0.20	0.50	0.10	0.80	0.10	0.10	0.80	0.50	0.70	67.00	8.70
dibenz[ah]anthracene	mg/kg	0.13	0.35	1.10	0.10	0.66	1.30		0.64	0.36	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	5.70	0.70
indeno[123-cd]pyrene	mg/kg	0.77	0.75	4.60	0.10	1.30	4.90		1.70	0.91	0.10	0.10	0.10	0.10	0.10	0.30	0.10	0.40	0.10	0.10	0.80	0.70	0.60	33.00	5.00
naphthalene	mg/kg	0.10	0.10	0.43	0.10	0.10	1.40		0.69	0.10	1.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.10	8.30	0.60
aromatic EC 16-21	mg/kg						2800.00			20.00	0.60	0.60	14.00	0.60	0.60	2.10	4.10	12.00	7.20	0.60	0.60	0.60	29.00	0.60	
aromatic EC 21-35	mg/kg						6100.00			190.00	1.40	1.40	56.00	1.40	1.40	5.00	15.00	62.00	41.00	1.40	1.40	74.00	43.00	1.40	

When soil samples were analysed against residential threshold levels, out of a total of 52 samples, 28 were found not to be contaminated above residential thresholds.

Of the 24 remaining samples that were above thresholds, most were marginal. 6 samples in particular: M2-2m, M2-3m, M3-1.2m, M6-1.2m, M6-2m, M14-1.35m only contained marginal asbestos which isn't a mobile contaminant.

The one sample with Nickel (M14-1.8m) noted above the residential limit can be considered an outlier, as the Site t95 is below the threshold.

The one exceedance of benzo[a]anthracene (M13-1.61m) noted above the residential limit can be considered an outlier, as the Site t95 is below the threshold.

The one exceedance of chrysene (M13-1.61m) noted above the residential limit can be considered an outlier, as the Site t95 is below the threshold.

However, due to above elevated levels noted, existing Site soil is considered unsuitable for the proposed end, and will need remediation/mitigation measures in order to protect human receptors from arsenic, lead, asbestos, benzo[a]pyrene, benzo[b]fluoranthene, & dibenz[ah]anthracene.

As part of Site proposals, the finished ground level is to be raised from existing, allowing encapsulation and adequate cover of mildly contaminated existing soil to protect the end users.

2.4.1.2. Ground Gas.

2.4.1.2.1. Historic landfill Sites.

There are 3No. local historic landfill sites: Sladen Bridge 115m west; Greenvale 185m northwest; and Wellfield Mill 325m northeast; but these are all filled with inert waste and generally at higher level than the Application Site – so little risk of ground gas is attributed to these sources & any pathways are considered mitigated.

2.4.1.2.2. On-site refuse tips/infilled ponds/infilled land.

Investigations have revealed the general Site is infilled with inert clayey made ground with the following exceptions:

- The refuse area to the southeast corner of the Site is relatively thin (approx 2m) & comprises ash, brick, stone & glass fill. Historic maps show the refuse tip built up above the ground profile which has been predominantly removed leaving the depth found. The investigations appear to corroborate the assumption that the made ground in this location was formed from tipping of boiler ash & demolition of the remaining parts of the historic mill building destroyed by fire.
- The former reservoir central to the Site was of raised bund design, above the general level of the Site ground level at that time (retaining head for hydraulic power & washing). This is evident on historic maps, historic photographs; and is again corroborated by the trial hole investigations which found the same depth & type of made ground in this area to the rest of the Site.
- There was a deeper section of fill associated with the historic mill basement, but the type of fill was inert coarse building rubble - generally brick & stone.
- No putrescible material was found in the above areas, and there is little risk of ground gas from these areas/sources.
- General made ground across the Site is noted to be clay fill.

No credible risk is attributed to this source.

2.4.1.2.3. Radon.

New radon maps indicate the Application Site is within an area where the radon potential is 5-10%. The general risk is medium and the proposed Site buildings will require a radon gas membrane incorporated into the foundations. Due to the risk category, standard protection is required (radon membrane only).

2.4.1.2.4. Alluvium.

N/A – only minor alluvial materials were noted as thin deposits local to the watercourse areas. Much of the Application Site is directly onto bedrock.

2.4.2. Property (existing or proposed).

2.4.2.1. Buildings.

There are no contaminants of concern, nor hazardous risks arising from environmental issues noted in the risk assessment to buildings or structures.

Sulphate was recorded below action level (DS1) for all soil samples taken across the Site.

Sulphate was recorded below action level (DS1) for all borehole groundwater samples taken across the Site.

Although not a risk to the buildings specifically (ie explosion), the risk from radon will need to be mitigated within the building foundations to ensure radon gas does not enter enclosed spaces, where it could ultimately cause harm to human receptors as discussed above in the Human Health/Ground Gas section.

There are no risks to offsite buildings or structures from the Site.

2.4.2.2. Crops.

Crops can be considered a pathway for the purposes of the assessment. The offsite/wider area is upland agricultural/pastoral and not suitable for arable farming. There is no receptor in this case and therefore no offsite pollutant linkage or risk.

Only minor contamination of the existing onsite soil was noted in the soil sampling results.

While there may be minor crops in gardens or greenhouses, it is the human end user that is the ultimate receptor in the case of the Application Site, and Site soil has been deemed unsuitable for the end use and requires mitigation/remediation as described in the above sections.

Excavations are unlikely to be deeper than 600 mm in typical gardening activities, and root systems are typically up to 600 mm. Encapsulating existing minor contamination of Site soil with a suitable cover will mitigate the risk to crops and human receptors, whilst providing a suitable growing medium for plants.

2.4.2.3. Livestock.

The Site is residential and not suitable for livestock.

Pollution of groundwater/surface water is considered mitigated (refer to next section), and development would prevent pollution of the water environment including to offsite receptors.

There is no pathway in this case and therefore no pollutant linkage or risk.

2.4.2.4. Pets.

Pets are highly likely on the Site, and can be considered to share the same risks as human receptors for the purposes of the assessment.

Excavations by children or pets are unlikely to exceed 600 mm. Encapsulating existing minor contamination of Site soil with a suitable cover will mitigate the risk to pets as well as human receptors.

2.4.2.5. Woodland.

There is no on-site woodland to consider. However, there is woodland to the north side of the Site, offsite, on adjacent land which follows the Greenvale Brook Valley down towards Summit village.

Pollution of groundwater/surface water is considered mitigated (refer to next section), and development would prevent pollution of the water environment including to offsite receptors.

There is no pathway in this case and therefore no pollutant linkage or risk.

2.4.2.6. Service lines & pipes.

There is no risk to general service lines or pipes, except for potable water supplies serving the development only.

Soil sampling across the Site has recorded levels above those given in the United Utilities PSRAS table.

Where potable water pipes are to be laid in existing ground, suitable protection will be required in the form of barrier pipe.

Should potable water pipes be laid in inert engineered fill above the existing ground material, then standard PE pipe will suffice.

2.4.3. Adjoining Land.

Pollution of groundwater/surface water is considered mitigated (refer to next section), and development would prevent pollution of the water environment including to offsite receptors.

2.4.4. Controlled Waters.

2.4.4.1. Groundwater.

On return the samples were assessed by TJ Booth Associates to common threshold comparison data. Groundwater samples are generally compared against the Environmental Quality Standards (EQS) & also drinking water standards (UK DWI 2016 & WHO 2022).

The following table indicates all samples noted as elevated when compared to the relevant drinking water supply guidelines for common groundwater pollutants. All other contaminants of concern that passed the chemical analysis have been omitted:

Groundwater Risk To Aquifers					
Contaminant of Concern	UK DWI Water Supply Regulations 2016		WHO Drinking Water Quality 2017		MITIGATION
	REMEDIAL ACTION	Samples Above Trigger Value	Samples Above Trigger Value	Samples Above Trigger Value	
Selenium	FURTHER ACTION OR MITIGATION	M2-1.8m, M14-2.3m, M14-2.82m	n/a	n/a	Limited pathways & no receptor, therefore no risk
Sulphate	FURTHER ACTION OR MITIGATION	TH16-GWS1, TH18-GWS3	n/a	n/a	Limited pathways & no receptor, therefore no risk
benzo[a]pyrene	FURTHER ACTION OR MITIGATION	TH18-GWS3, M2-1.8m, M6-2.62m, M10-0.59m, ALL OTHER SAMPLES <LOD	n/a	n/a	Limited pathways & no receptor, therefore no risk
perfluorooctanoic acid (PFOA)	n/a	n/a	FURTHER ACTION OR MITIGATION	M1-0.05m, M1-0.3m, M2-1.46m, M2-1.5m, M3-2.0m, M4, M4-1.9m, M6, M9-0.34m, M9-1.71m, M10-0.59m, M10-0.65m, M14-2.82m	Limited pathways & no receptor, therefore no risk
Per/polyfluoroalkyl substances (PFAS) total	FURTHER ACTION OR MITIGATION	M1-0.05m, M1-0.3m, M2-1.46m, M2-1.5m, M3-2.0m, M4, M4-1.9m, M6, M9-0.34, M9-1.71, M10-0.59, M10-0.65m, M14-2.82m	n/a	n/a	Limited pathways & no receptor, therefore no risk

Groundwater sampling was undertaken to assess the potential for groundwater contamination across the Site. Groundwater has a potential impact through extended pathways such as underlying aquifers, and the nearby watercourses, where mobile contaminants can harm relative ecosystems or the end users.

When considered in the context of aquifer pathways and human end users, the earlier desk study and risk assessment has found that the risk is considered mitigated by lack of end use receptors.

The environmental database identified the underlying aquifer as being only capable of supporting water supplies at a local rather than strategic scale.

Regarding offsite receptors, the Application Site & local area are not in a Drinking Water Safeguard Zone (Groundwater)/Source Protection Zone, and there are no groundwater abstraction licences in the local area. Of licences that do exist, the location is in different catchment areas over 800m distant.

Regarding on-site receptors, the proposed dwellings will have dedicated potable water supplies from the United Utilities water mains so will not rely on groundwater sources for drinking etc.

Of the contaminants that were elevated, most were marginal, and elevations were noted only in specific boreholes (ie not uniformly spread through the groundwater) suggesting minor local elevations to point source contamination. As the risk isn't spread uniformly through the Site, there is little risk of widespread contamination away from it.

Also, without end use receptors, there is no pollutant linkage as per the UK source-pathway-receptor methodology, and therefore no relevant risk.

2.4.4.2. Surface Water.

Surface water/river sampling results are generally compared against the Environment Quality Standards for Freshwater (EQS). The results are also compared to the corresponding groundwater EQS results to infer potential impacts from that source.

2.4.4.2.1. Greenvale Brook.

The following table indicates all samples noted as elevated when compared to the relevant EQS guidelines for common pollutants. All other contaminants of concern that passed the chemical analysis have been omitted:

Surface Water							
Contaminant of Concern	Surface Water EQS Freshwater AA		Groundwater Elevation against EQS AA	EQS Freshwater MAX		Groundwater Elevation against EQS MAX	MITIGATION OF SURFACE WATER SAMPLES ABOVE EQS
	REMEDIAL ACTION	Samples Above Trigger Value		REMEDIAL ACTION	Samples Above Trigger Value		
Cadmium	FURTHER ACTION	triggered values all <LOD, all others <REGS	NO	PASS	n/a	NO	NO FURTHER ACTION. All samples below LOD. EQS MAX is OK. Relevant drinking water standards OK.
Chromium VI	FURTHER ACTION	all <LOD	YES	n/a	n/a	n/a	NO FURTHER ACTION. All samples below LOD. Relevant drinking water standards OK.
Copper	FURTHER ACTION	WS4, WS5, WS6, WS7	YES	n/a	n/a	n/a	NO FURTHER ACTION. Appears to be a general background reading, sample concentrations similar upstream to downstream. Relevant drinking water standards OK.
Lead	FURTHER ACTION	WS4, WS5, WS6, WS7	NO	PASS	n/a	NO	NO FURTHER ACTION. Potential for upstream sources? Sample concentrations were higher upstream & at the confluence with Lydgate Brook than within or downstream of the Site. Relevant drinking water standards OK.
Mercury	n/a	n/a	n/a	FURTHER ACTION	triggered values all <LOD, all others <REGS	YES	NO FURTHER ACTION. All samples below LOD. Relevant drinking water standards OK.
Zinc	FURTHER ACTION	WS2, WS4, WS5, WS6, WS7	YES	n/a	n/a	n/a	NO FURTHER ACTION. Potential for upstream sources? Sample concentrations were higher upstream & at the confluence with Lydgate Brook than within or downstream of the Site. Relevant drinking water standards OK.
Cyanide (Total)	FURTHER ACTION	all <LOD	YES	FURTHER ACTION	all <LOD	YES	NO FURTHER ACTION. All samples below LOD. Relevant drinking water standards OK.
benzo[a]pyrene	FURTHER ACTION	all <LOD	YES	PASS	n/a	NO	NO FURTHER ACTION. All samples below LOD, EQS MAX is OK. Relevant drinking water standards OK.
benzo[g,h,i]perylene	n/a	n/a	n/a	FURTHER ACTION	all <LOD	YES	NO FURTHER ACTION. All samples below LOD. Relevant drinking water standards OK.
fluoranthene	FURTHER ACTION	all <LOD	YES	PASS	n/a	NO	NO FURTHER ACTION. All samples below LOD, EQS MAX is OK.
phenol	FURTHER ACTION	all <LOD	YES	FURTHER ACTION	all <LOD	YES	NO FURTHER ACTION. All samples below LOD.
perfluorooctane sulfonate (PFOS) total	FURTHER ACTION	ALL SAMPLES >REGS	YES	PASS	n/a	NO	NO FURTHER ACTION. All samples below LOD. EQS MAX is OK. Relevant drinking water standards OK.
Per/polyfluoroalkyl substances (PFAS) total	FURTHER ACTION	ALL SAMPLES >REGS	YES	PASS	n/a	NO	NO FURTHER ACTION. Appears to be a general background reading, sample concentrations got lower from upstream of the Application Site to downstream. EQS MAX is OK. Relevant drinking water standards OK.

Most of the contaminants of concern were either below current EQS AA guideline trigger values. Of those that were above the EQS AA, most were below the relevant EQS MAX.

Of the contaminants of concern that were above the EQS MAX, all were below the lab LOD and relevant drinking water standards.

Some of the contaminants of concern were also upstream of the Site, suggesting upstream contaminants sources (old mills, historic infilled land, agriculture etc).

2.4.4.2.2. Canal Drain.

The Canal Drain is a semi dry channel, only conveying minor flows in extreme runoff events. It is between 13-15m higher than the lower part of the Application Site, and 7m higher than the upper part.

It is against the hydraulic gradient, pollution of groundwater is considered mitigated, and development would prevent pollution of the water environment including to offsite receptors.

There is no pathway in this case and therefore no pollutant linkage or risk.

2.4.5. Ecological Systems.

The Site was formerly fully covered with buildings, concrete & macadam hardstandings. There were no significant onsite ecological systems or habitats.

As discussed in the Human Health section, existing Site soil is considered unsuitable for the proposed end and comprises minor contamination in the form of arsenic, lead, asbestos, benzo[a]pyrene, benzo[b]fluoranthene, & dibenz[ah]anthracene.

Root systems for shrubs are typically up to 600 mm, and bioturbation is typically limited to the top 600 mm of the soil profile. Encapsulating existing minor contamination of Site soil with a suitable cover will mitigate the contamination risk while providing a healthy environment for ecological systems, both above and below ground level.

Pollution of groundwater/surface water is considered mitigated, and development would prevent pollution of the water environment including to offsite receptors (which includes offsite ecological systems).

2.4.6. Archaeological Sites and Ancient Monuments.

There are no onsite designated or non-designated assets.

Designated assets in the wider area & relatively local to the Site include:

- Lightowlers Cottage, 170m west;
- Sladen Fold Farmhouse, 500m north.
- Nos. 4 and 5, Sladen Fold, 500m north.
- No. 3 Sladen Fold & adjoining barn, 500m north.

Non-designated assets in the wider area & relatively local to the Site include:



- Lightowlers Barn, 170m west.
- Rochdale Canal and Structures, adjacent & 400m northwest.
- Greenvale Mill, Todmorden Road, 400m northwest.
- Fothergill Rock Nook Mill, Todmorden Road, 500m northwest.
- Sladen Wood Mill, Todmorden Road, OL15 9EW, 600m northwest.

There are other designated and no-designated assets in the wider area, but all are further than the above noted distances and not considered relevant. The Sites are considered too distant to be impacted by the Application Site.

Pollution of groundwater/surface water is considered mitigated, and development would prevent pollution of the water environment including to offsite receptors.

No other risks from the Site are considered appropriate.

2.5. Final Conceptual Model.

Current source/s		Original associated usage / location / source	Contaminant type	Pathway	Receptor	Pollution linkage	Consequence	Probability	Risk	Mitigation proposed
CHEMICAL (SOLID)	Existing made ground - surface/ sub-soil.	Mill & chimney demolition materials, mortars & plasters, cladding, heat resistant fixings/fittings/insulation, other material such as hardcore & planings etc.	Metals, PAHs, asbestos.	Direct ingestion, aerial ingestion, dermal contact, drinking water. Crops. Water pipes/services.	Primarily human - Site construction operatives & future residential Site occupants. Pets. Ecological systems.	Metals, PAH, asbestos have been identified in the made ground profile at shallow depth which can pose a risk to human receptors in a residential end use. There is some hydrocarbon contamination local only to trial hole TH7 as identified in the original trial holes. It has not been noted above guidance levels in general Site groundwater. Although the contamination is above that for a residential end use, it is not a risk to end use receptors due to depth and hasn't led groundwater becoming contaminated above regulations. While contamination can remain in situ, human end use receptors & pets will need protection from underlying soils by remedial measures. The remedial measures will also be of benefit to ecological systems on-site.	Medium.	High likelihood.	High risk.	REQUIRES REMEDIATION. Site remediation should take the form of cover soils to protect human, pet, and ecological receptors. Potable water supplies through made ground will need to be protected ie barrier pipe.
		Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.							
		Former mill ponds – potential for infill.	Metals, PAHs, asbestos.							
		Landfill (refuse heap) & filter tanks.	Metals, PAHs, asbestos.							
		Substation.	PCBs.			Substation construction was post-ban on PCBs so source is considered mitigated.	Medium.	Unlikely.	Low risk.	NO REMEDIATION REQUIRED.
		Former buildings, fill, mortars & plasters.	Sulphates.	Contact with underground structures.	Building structures /concrete.	Site soils noted at DS1, no risk to foundations.	Minor.	Unlikely.	Very low risk.	NO REMEDIATION REQUIRED.
GROUND GAS RISK (VAPOURS)	Geologic al ground gas.	Coal seams from Coal Measures.	CH ₄ , CO ₂ , other trace gases.	Diffusion through permeable soil/subsoil, building substructures, aerial inhalation.	Human - future residential Site occupants.	A separate coal mining risk assessment has concluded that shallow coal seams do not underly the Site & therefore risks are mitigated. It was approved by the Coal Authority.	Medium.	Unlikely.	Low risk.	NO REMEDIATION REQUIRED.
		Radon sources in Namurian deposits.	Rn.			The Site is within a 5-10% radon potential area classed as medium risk and a gas membrane will be required in the construction of foundations/slab.	Medium.	Likely.	Moderate risk.	REQUIRES REMEDIATION. Radon membranes should be incorporated

										in the foundations & ground floor slabs.
	Anthropogenic ground gas sources.	Refuse heap.	CH4, CO2, other trace gases.			The refuse heap is assumed to comprise the demolition rubble from the former woollen mill built in the 1850s, as well as ash from on-site processes. The inert waste was stockpiled & stored above ground mitigating any risks.	Mild.	Unlikely.	Very low risk.	NO REMEDIATION REQUIRED.
		Filter tanks				Former filter tanks to the northwest corner of the Site were small in area, and open structures which generally comprise ash as a filter medium. The tanks have been disused for approximately 40years due to a pump house being incorporated into the Site.				
		Former mill ponds.				Unlikely to contribute to ground gas generation. Mill ponds were small, and photographic evidence indicates these structures were banded/above ground.				
CHEMICAL (LIQUID)	Ground water/ surface water.	Former tanks – most notably to the north of the current substation from old maps.	Hydrocarbons.	Controlled Waters: specifically groundwater & aquifers.	Human - future residential Site occupants, user in the wider area. Pets. Ecological systems. Adjoining land /woodland.	Metals, PAH & PFAS have been identified in groundwater, however, the pathways are considered mitigated due to lack of permeability for mass consumption in the wider areas, and the Application Site and local area are not within ground or surface water protection zones. There are also a lack of relevant receptors in the local area. Hydrocarbon contamination is below guidance values and is not a risk.	Medium.	Unlikely.	Low risk.	NO REMEDIATION REQUIRED.
		Mill & chimney demolition materials, mortars & plasters, other material such as hardcore & planings etc.	Metals, PAHs.							
		Former industrial processes.	PFAS – PFOA & PFOS.							
		Former buildings, fill, mortars & plasters.	Sulphates.							
		Former tanks – most notably to the north of the	Hydrocarbons.	Controlled Waters: specifically		Metals, PAH & PFAS have been identified in groundwater, but the relevant groundwater contaminants of concern have not been linked	Mild.	Unlikely.		NO REMEDIATION REQUIRED.



		current substation from old maps.		surface waters such as Greenvale Brook & the Canal Drain.	Aquatic habitats & biota. Ecological systems. Adjoining land /woodland.	to relevant contaminants of concern in the surface water environments. Surface water contaminants of concern have been found to be below regulations, below the relevant LOD, or contaminants have been identified upstream/off-site. Hydrocarbon contamination is below guidance values and is not a risk.			Very low risk.	
		Mill & chimney demolition materials, mortars & plasters, other material such as hardcore & planings etc.	Metals, PAHs.							
		Former industrial processes.	PFAS – PFOA & PFOS.							

3. PHASE 3 – REMEDIATION STATEMENT.

3.1. Basic Site Details.

Full details included in the Phase 2 Site Investigation Introduction & subsequent sections.

3.2. Site & Remedial Objectives.

Site investigations comprised trial holes, boreholes, soil/groundwater/surface water sampling methods, with historic made ground recorded over the Site.

There are currently two remedial objectives:

- The protection of Site receptors as identified in the Final Risk Assessment & Final Conceptual Model sections from contamination in existing Site soil/made ground above that allowed for a residential end use.
- The protection of on-site human end users from radon gas.

3.3. Conceptual Model (Final) & Relevant Pollution Linkages.

Refer to Phase 2 Site Investigation and Assessment section of the report for Final Conceptual Model.

To break the pollution linkages, either the source must be removed or the pathways mitigated. It is not appropriate in this case to modify behaviour of or remove receptors.

A pollutant linkage was identified regarding the minor contamination of Site made ground with metals, PAH & asbestos noted. To break the pollutant linkage, a minimum 600mm cover must be used in the external soft landscaping which will remove any potential pathway to end use receptors.

Additionally, barrier pipe will be needed IF potable water pipes are routed through existing made ground.

A pollutant linkage was also identified with regard to radon gas. To break the relevant pollutant linkage, a radon membrane will be required in the proposed building slab/foundations. The inclusion of the membrane will remove potential pathways to the end use receptor.

3.4. Recommended Remediation.

3.4.1. Shallow soil remediation.

While made ground may remain on Site beneath permanent hardstandings such as buildings, roads, pavements & pathways etc; to mitigate the risk to receptors, it is advised that a cover layer of clean inert soil is imported for garden and soft landscaping areas ONLY.

Dependent on the final finished levels, existing made ground within proposed soft landscaping areas, should either be covered with 600mm of imported soil, or excavated to 600mm from finish levels (or to clean virgin material if shallower than this) and replaced with imported soil to suit finishes. The 600mm cover system is adopted for the following reasons:

Root systems for shrubs are typically up to 600 mm;

Excavations are unlikely to be deeper than 600 mm in typical gardening activities;

Bioturbation is typically limited to the top 600 mm of the soil profile;

Excavations by children or pets are unlikely to exceed 600 mm.

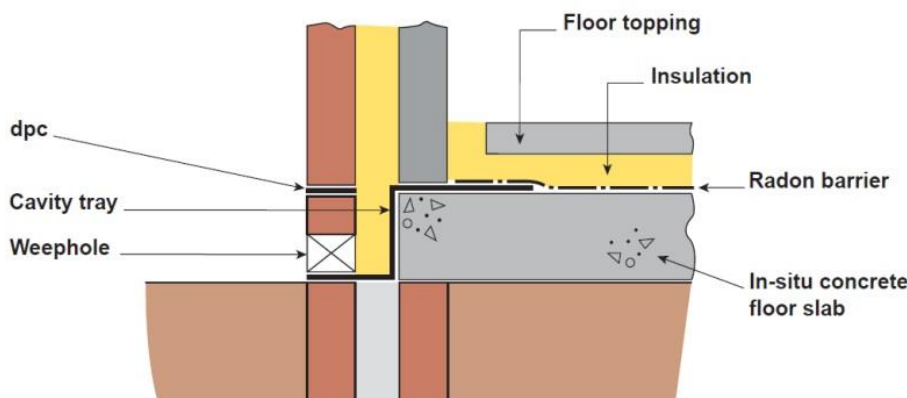
The cover level can be further reduced to 450mm in common or public open space areas.

Imported soil should be clean/inert and free from deleterious materials, and should be suitable for use in a residential end use setting. It should be able to pass testing of metals, speciated PAH, inorganics & sulphates, SOM, and asbestos screening to current Defra Category 4 Screening Levels (C4SLs) where available, and then to the LQM/CIEH (S4ULs), for use in a residential end use setting.

3.4.2. Ground gas remediation.

To ensure the protection of Site end users, ground gas remediation will be required.

A radon membrane should be included in all building foundations. The membrane will need to comprise a robust construction, suitably lapped and sealed as per manufacturers guidance, with proprietary top hat seals to all incoming slab penetrations. Refer to typical floor slab:



3.5. Verification (Phase 4 requirements).

Verification of the imported soil may be required for Planning or Building Control/Building Regulations submission. Should this be required, it will need to be undertaken by suitably qualified consultants and comprise the following:

- Import source material.
- Characterisation & suitability of material.
- Soil sampling should be undertaken as per YALPAG Guidelines as per the following ratios:

Virgin quarried materials, 1-2 samples to confirm inert nature.

Crushed hardcore, stone, brick, min 1 sample per 500cum.

Greenfield/manufactured, generally 1 sample per 250cum (min 3 samples).

Brownfield, generally 1 sample per 50cum (min 6 samples).

- Samples should be tested for the following contamination suites: metals, inorganics, PAH USEPA16 speciated, and asbestos screening. Results will be analysed against Defra Category 4 Screening Levels (C4SLs) where available, and then to the LQM/CIEH (S4ULs), for use in a residential end use setting.
- Verification Depth.
- Reporting (including photographic evidence).

3.6. Additional Notes.

Before any further work is undertaken, this report should be submitted to and agreed by the Local Planning Authority Contaminated Land Department/Building Control Department as necessary.

We trust that the above clear, but should you require further advice please contact the undersigned.

Signed.....



D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...



T J Booth BSc (Hons), C. Eng. C. Env. MICE.

T J Booth Associates.

4. APPENDIX A: PLANS, FIGURES, ASSESSMENTS & CERTIFICATION.

4.1. Location Plan.

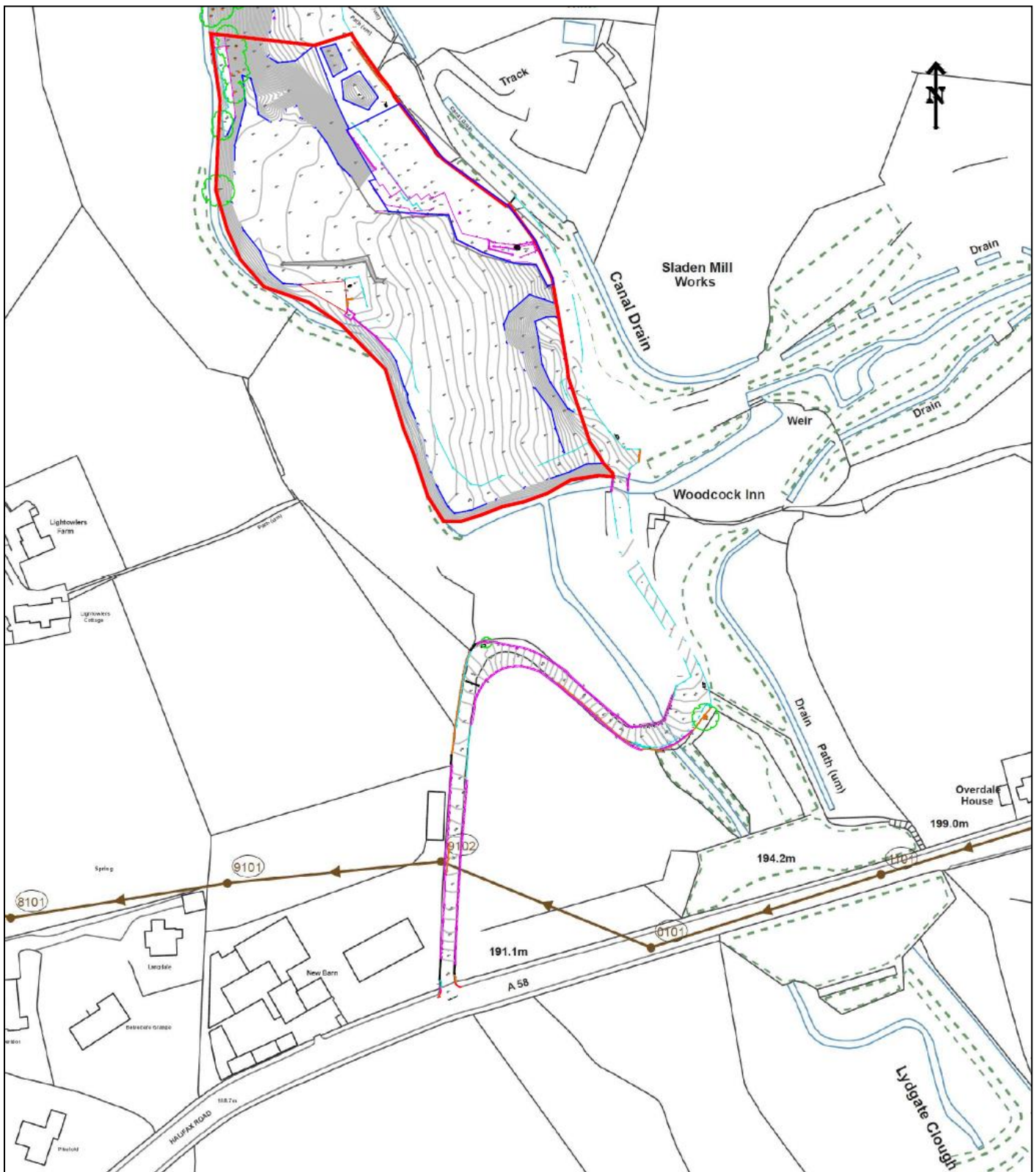


Table of lot numbers and areas (from left to right):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: All FFL to be 150mm above external ground level

See landscaping plan for full details for green spaces

Materials:

- Asphalt (grey) - Asphalt (grey) - Asphalt (grey)
- Gravel (grey) - Gravel (grey) - Gravel (grey)
- Concrete (grey) - Concrete (grey) - Concrete (grey)
- Brick (red) - Brick (red) - Brick (red)
- Stone (brown) - Stone (brown) - Stone (brown)
- Timber (brown) - Timber (brown) - Timber (brown)
- Green (green) - Green (green) - Green (green)
- Water (blue) - Water (blue) - Water (blue)

[illegible]



4.4. Rotary Borehole Investigation Log 03.06.2021.

Borehole reference BH1				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	168.75			
	167.45	X X X X X X	(1.30) 1.30	Loose heterogeneous MADE GROUND
<u>v</u>	166.75	X X X X X X X X	(2.70)	Weathered grey MUDSTONE
	164.75	X X	4.00	
	160.25	X X X X X X X X X X X X X X	(4.50) 8.50	Yellow SANDSTONE
	159.75	X X	9.00	Grey SANDSTONE
	158.55	X X X X X X	(1.20) 10.20	Yellow SANDSTONE
	155.75	X X X X X X X X X X	(2.80) 13.00	Grey SANDSTONE
	148.75	X X	(7.00) 20.00	Grey & yellow SANDSTONE
		X X X X X X X X X X X X X X X X	(10.00)	Grey SANDSTONE

		X X X X X X X X X X X X X X X X X X		
	138.75	X X	30.00	
				Borehole ends
Not shown to scale				
Additional notes: coal measures exploration, no coal seams or voids encountered				

4.5. Trial Hole Investigation Logs 24.03.2022.

Trial pit reference TH1				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	171.50			
	171.20	X X X X	(0.30) 0.30	Light brown very gravelly, clayey MADE GROUND (topsoil). Gravel sized brick, stone, glass & ash.
	169.50	X X X X X X	(1.70) 2.00	Compact dark brown/black sand sized ash MADE GROUND occasional cobble size brick & stone. (S1)
	169.45	X X	2.05	Light brown SANDSTONE BEDROCK
				Trial pit ends
Not shown to scale				
Additional notes: No groundwater encountered.				

Trial pit reference TH2				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	169.50			
	169.10	X X X X	(0.40) 0.40	Brown slightly sandy very gravelly clay MADE GROUND, gravel sized brick, concrete, stone, occasional timber.
	167.50	X X X X X X	(1.60) 2.00	Dark brown/black very gravelly clay MADE GROUND, gravel sized brick, stone, concrete, occasional timber, with abundant cobble sized brick, stone, and concrete. Hydrocarbon odour (S2).
<u>v</u>	167.30	X X	2.20	Dark grey-black MUDSTONE BEDROCK
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted was a very slight seepage on top of the shale bedrock only.				

Trial pit reference TH3				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	168.80			
<u>v</u>	166.25 166.20	X X X X X X X X	(2.60) 2.60	Light brown slightly sandy very gravelly clay MADE GROUND. Coarse gravel sized brick, stone, mortar, occasional shale & coal. Large cobbles of brick & stone - very loose to bottom 600mm. (S3)
	165.90	X X	2.90	Dark grey-black MUDSTONE BEDROCK
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted immediately above shale bedrock only. Due to excavation in impermeable bedrock, the water filled and pooled up to the top of bedrock only (166.25).				

Trial pit reference TH4				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	170.50			
	168.20	X X X X X X X X	(2.30) 2.30	Brown very sandy very gravelly silty MADE GROUND. Occasional clay. Gravel sized brick, stone, concrete, rare coal, ash & vitrified clay. (S4)
	167.90	X X	2.60	Orange/brown very clayey sand MADE GROUND.
<u>v</u>	167.30 166.50	X X X X X X	(1.40) 4.00	Very loose very coarse cobble sized brick & stone (demolition rubble fill) MADE GROUND.
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater encountered and standing at 167.30.				

Trial pit reference TH5				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	169.30			
	168.95	X X X X	(0.35) 0.35	Dark brown gravelly sandy MADE GROUND. Gravel sized stone, brick, shale & coal. Cobble sized brick & stone. (S5)
<u>v</u>	167.80 167.30	: o : o : o : o : o : o : o : o : o : o	(1.65) 2.00	Loose to medium dense orange/brown silty SAND AND GRAVEL
	166.95	X X	2.35	Light brown SANDSTONE BEDROCK (weathered)
	166.90	X X	2.40	Light brown SANDSTONE BEDROCK
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted seeping through sand & gravel at 167.80.				



Trial pit reference TH6					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	167.80				
		X X X X X X	(1.70)	(firm) brown gravelly clay MADE GROUND. Occasional cobbles. Gravel & cobble sized stone, brick, slate, plastic. (S6)	
	166.10	X X	1.70		
<u>v</u>	164.95 164.90	X : X : : X : X : X : X :	(1.20) 2.90	Soft to firm orange/brown slightly sandy SHALE BEDROCK becoming soft & damp towards the bottom with occasional sandstone boulders.	
	164.50	X X	3.30	Dark grey-black MUDSTONE BEDROCK (weathered)	
	164.10	X X	3.70	Dark grey-black MUDSTONE BEDROCK	
				Trial pit ends	
Not shown to scale					
Additional notes: Groundwater seepage noted on top of the shale bedrock only.					

Trial pit reference TH7					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	167.50				
		X X X X X X X X X X	(3.00)	Black sandy, gravelly clay MADE GROUND with abundant cobbles. Gravel & cobbles of stone, brick & concrete. Rare cable, fabric (plastic) & timber. (S7). Hydrocarbon odour noted at 2500mm. (S7)	
	164.50	X X	3.00		
<u>v</u>	163.80 163.00	o o o o o o o o	(1.50) 4.50	Loose orange/brown GRAVEL with occasional large boulders & very coarse to bottom. Very wet & hydrocarbon sheen to groundwater.	
				Trial pit ends	
Not shown to scale					
Additional notes: Groundwater noted in gravels as above.					

Trial pit reference TH8					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	167.80				
		X X X X	(1.00) 1.00	Orange/brown clayey sand & gravel MADE GROUND	
		X X X X X X	(2.00)	Dark grey/black clayey sand & gravel MADE GROUND with abundant cobble sized brick. Rare vitrified clay pipe, fabric (plastic) & timber.	
	164.80	X X	3.00		
<u>v</u>	163.75 163.70	o o o o o o o o	(1.10) 4.10	Loose orange/brown coarse GRAVEL with abundant cobbles & occasional large boulders.	
	163.65	X X	4.15	Orange/brown SANDSTONE BEDROCK (weathered)	
				Trial pit ends	
Not shown to scale					
Additional notes: Groundwater noted standing at 163.75 immediately above bedrock interface.					



Trial pit reference TH9					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	167.00				
	166.15	X X X X	(0.85) 0.85	Dark brown/black very slightly silty slightly gravelly MADE GROUND. Gravel & cobble sized brick. Occasional cobble sized stone. (S9).	
	165.65	x x x	1.35	Orange/brown very fine sandy SILT	
	164.40	: o : o : o : o : o : o : o :	(1.25) 2.60	Light brown SAND AND GRAVEL with abundant sandstone cobbles.	
	163.40	X X X X	(1.00) 3.60	Light brown SANDSTONE BEDROCK (highly weathered)	
	163.35	X X	3.65	Light brown SANDSTONE BEDROCK	
				Trial pit ends	
Not shown to scale					
Additional notes: No groundwater noted.					

Trial pit reference TH10					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	176.85				
	175.70	X X X X X X	(1.15) 1.15	Black very sandy slightly gravelly MADE GROUND with gravel & cobble size brick, & occasional cobble sized stone. (S10). Macadam & MOT to upper 200mm.	
	175.45	x : x : x	1.40	Orange/brown sandy SILT	
	174.45	: o : o : o : o : o	(1.00) 2.40	Light brown SAND AND GRAVEL with abundant cobbles.	
	173.70	X X X X	(0.75) 3.15	Light brown SANDSTONE BEDROCK (highly weathered)	
	173.65	X X	3.20	Light brown SANDSTONE BEDROCK	
				Trial pit ends	
Not shown to scale					
Additional notes: No groundwater noted.					

4.6. Trial Hole Investigation Logs 07.03.2023.

Trial pit reference TH11					Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description	
	174.40				
	171.80	X X X X X X X X X X	(2.60) 2.60	Very loose dark brown sand & gravel MADE GROUND (gravel is brick, stone, concrete, ash etc).	
	171.20	X X X X	(0.60) 3.20	Orange/brown SANDSTONE BEDROCK (weathered)	
	170.70	X X	3.70	Orange/brown SANDSTONE BEDROCK	
				Trial pit ends	
Not shown to scale					
Additional notes: No groundwater noted.					



Trial pit reference TH12				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	174.65			
	173.55	X X X X	(1.10) 1.10	Very loose dark brown sand & gravel MADE GROUND (gravel is brick, stone, concrete, ash etc).
	173.10	X X X X	(0.45) 1.55	Orange/brown SANDSTONE BEDROCK (weathered). Retaining wall founded on top.
				Trial pit ends
Not shown to scale				
Additional notes: No groundwater noted.				

Trial pit reference TH13				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	175.25			
	173.55	X X X X X X	(1.70) 1.70	Very loose dark brown sand & gravel MADE GROUND (gravel is brick, stone, concrete, ash etc).
	172.65	X X X X	(0.90) 2.60	Orange/brown SANDSTONE BEDROCK. Retaining wall founded on top.
				Trial pit ends
Not shown to scale				
Additional notes: No groundwater noted.				

Trial pit reference TH14				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	175.80			
	173.40	X X X X X X X X	(2.40) 2.40	Very loose dark brown sand & gravel MADE GROUND (gravel is brick, stone, concrete, ash etc).
	172.50	X X X X	(0.90) 3.30	Orange/brown SANDSTONE BEDROCK. Retaining wall founded on top.
				Trial pit ends
Not shown to scale				
Additional notes: No groundwater noted.				

Trial pit reference TH15				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	174.50			
		X X X X X X X X X X X X X X X X X X	(5.50)	Light brown interbedded sandstone & mudstone BEDROCK
	169.00	X X	5.50	
				Trial pit ends
Not shown to scale				
Additional notes: Surface excavation down side of bank between upper & lower parts of Site. No groundwater noted.				

4.7. Trial Hole Investigation Logs 20.07.2023.

Trial pit reference TH16				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	168.84			
		X X X X	(1.10)	Dark brown/grey clayey sand & gravel MADE GROUND. Sand & gravel is brick, stone, slate, concrete, rare macadam, with the upper 300mm comprising MOT road base/macadam.
	167.74	X X	1.10	
<u>v</u>	166.94	X - X -	(1.20)	Loose to medium dense light brown clayey SAND & GRAVEL. Occasional large cobbles & boulders noted. (GWS1)
	166.54	- X - X -	2.30	
		X - X -		
	166.14	X X	2.70	Dark grey-black MUDSTONE BEDROCK.
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted in sand & gravel.				

Trial pit reference TH17				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	167.40			
		X X X X	(1.20)	Dark brown clayey sand & gravel MADE GROUND. Sand & gravel is brick, stone, slate, concrete, mortar etc.
	166.20	X X	1.20	
<u>v</u>	165.30	X x X x	(1.00)	Medium dense light brown silty SAND & GRAVEL. Occasional large cobbles & boulders. (GWS2)
	165.20	x X x X	2.20	
	164.90	X X	2.50	Dark grey-black MUDSTONE BEDROCK.
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted just above bedrock only in sand & gravel.				



Trial pit reference TH18				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	167.40			
	166.60	X X X X	(0.80) 0.80	Light brown silty sand & gravel MADE GROUND
	164.90	X X X X X X	(1.70) 2.50	Dark brown/grey clayey sand & gravel MADE GROUND. Sand & gravel is generally brick & stone with rare timber noted. Slight hydrocarbon odour.
<u>v</u>	164.50 163.40	: o : o : o : o : o : o : o :	(1.50) 4.00	Loose to medium dense orange/brown silty SAND AND GRAVEL (GWS3)
	163.20	X X	4.20	Dark grey-black MUDSTONE BEDROCK.
				Trial pit ends
Not shown to scale				
Additional notes: Groundwater noted in sand & gravel.				

4.8. Borehole Investigation Logs 07.08.2023 - 08.08.2023

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Number M1	
Excavation Method MINI PERCUSSIVE		Dimensions Location AS PLAN		Ground Level (mOD) Dates 08/08/2023		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782	
						Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	MADE GROUND: brown occasionally yellowish brown gravelly silty clayey fine to coarse sand. Gravel sized fragments are subangular to subrounded fine to coarse of mixed lithologies including sandstone.			
0.30-1.20	B				0.30	MADE GROUND: greyish brown and occasionally yellowish brown gravelly silty clayey fine to medium sand. Gravel sized fragments are fine to coarse sandstone.			
1.20-2.00	C		1.20m to 2.00m - 100% recovery		(1.70)	...at 1.80m: becoming very clayey			
2.00-2.80	C		2.00m to 2.80m - 63% recovery		2.00	MADE GROUND: brown and occasionally yellowish brown gravelly silty clayey fine to medium sand. Gravel sized fragments are fine to coarse sandstone.			
					(0.80)				
			08/08/2023: DRY		2.80	Complete at 2.80m			
Remarks Hand dug inspection pit to 1.20m to check for buried services On completion the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 2.8m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m, 76mm to 2.8m.							Scale (approx) 1:25	Logged By WJP/JB	
							Figure No. 7782.M1		

Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved

**SUB SURFACE**

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site

SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB

Number
M2

Excavation Method
MINI PERCUSSIVE

Dimensions**Ground Level (mOD)****Client**

MERE DEVELOPMENT GROUP LIMITED

Job
Number
7782

Location

AS PLAN

Dates

07/08/2023

Engineer

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.40	B				(0.40)	MADE GROUND: brown very sandy silty clay. Sand is fine to coarse.			
0.40-1.20	B				0.40 (0.80)	MADE GROUND: soft brown gravelly sandy clayey silt with rare rootlets up to 2mm present. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of stone and sandstone.			
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20 (1.20)	MADE GROUND: greyish brown occasionally dark brown and brown gravelly silty clayey fine to medium sand. Gravel sized fragments are fine to coarse stone, brick and clinker.			
2.00-3.00	C		2.00m to 3.00m - 60% recovery		2.40 (0.60)	MADE GROUND: dark brown and dark grey gravelly slightly silty slightly clayey fine to medium sand. Gravel sized fragments are fine to coarse brick, stone and clinker.			
			07/08/2023: DRY		3.00	Complete at 3.00m			

Remarks

Hand dug inspection pit from GL to 1.20m to check for services.
No groundwater encountered.
On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 3.0m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level.
Core diameter: 86mm to 2.0m, 76mm to 3.0m.

Scale
(approx)

1:25

Logged By

WJP/JB

Figure No.

7782.M2

**SUB SURFACE**

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site

SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB

Number
M3

Excavation Method
MINI PERCUSSIVE

Dimensions**Ground Level (mOD)****Client**

MERE DEVELOPMENT GROUP LIMITED

Job
Number
7782

Location

AS PLAN

Dates

07/08/2023

Engineer

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.20	B				(1.20)	MADE GROUND: brown and dark grey gravelly silty clayey fine to medium sand. Gravel sized fragments are angular to subrounded fine to coarse of stone, clinker and brick.			
1.20-2.00	C		1.20m to 2.00m - 40% recovery		1.20 (0.80)	MADE GROUND: greyish brown and occasionally brown and dark grey gravelly sandy silty clay. Gravel sized fragments are angular to subrounded fine to coarse stone, brick and coal.			
2.00-3.00	C		2.00m to 3.00m - 35% recovery		2.00 (1.00)	MADE GROUND: brown and occasionally dark grey gravelly slightly silty slightly clayey fine to medium sand with occasional cobble sized fragments of brick. Gravel sized fragments are fine to coarse of brick and stone.			
3.00	D		07/08/2023: DRY		3.00	Complete at 3.00m			

Remarks

Hand dug inspection pit to 1.20m to check for buried services.
On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 3.0m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level.
No groundwater encountered.
Core diameter: 86mm to 2.0m, 76mm to 3.0m.

Scale
(approx)

1:25

Logged
By

WJP/JB

Figure No.

7782.M3

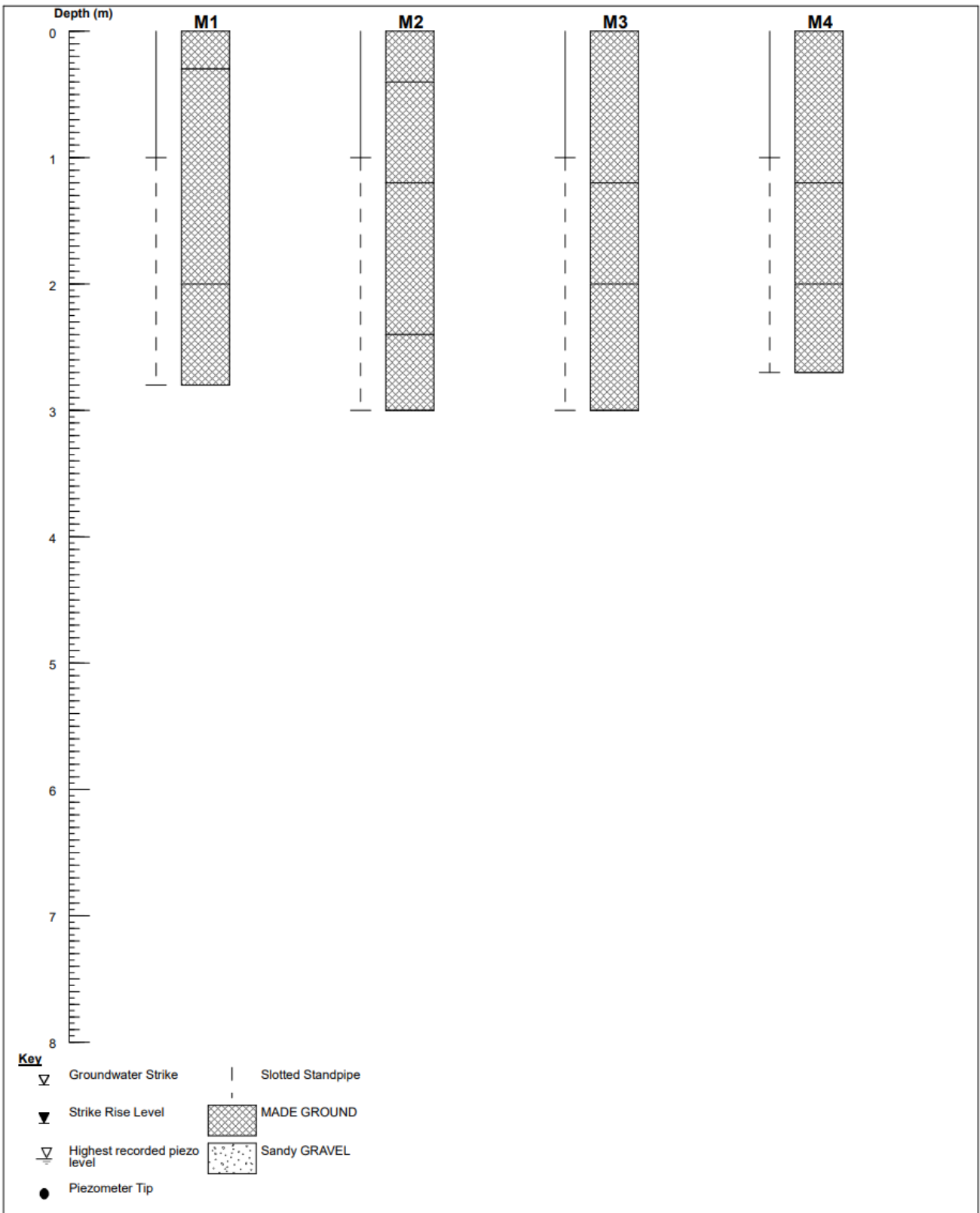
 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907					Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Number M4		
Excavation Method MINI PERCUSSIVE		Dimensions Location AS PLAN		Ground Level (mOD) Dates 07/08/2023		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782	
						Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.05-1.20	B				(1.20)	MADE GROUND: turf over greyish brown and brown gravelly silty clayey fine to coarse sand. Gravel sized fragments are angular to subrounded fine to coarse of brick, stone and sandstone.			
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20 (0.80)	MADE GROUND: dark brown gravelly silty clayey fine to medium sand. Gravel sized fragments are subangular to subrounded fine to coarse stone and brick.			
2.00-2.70	C		2.00m to 2.70m - 70% recovery		2.00 (0.70)	MADE GROUND: dark brown gravelly silty very clayey fine to medium sand with low cobble sized fragments of sandstone. Gravel sized fragments are subangular to subrounded fine to coarse sandstone.			
			07/08/2023: DRY		2.70	Complete at 2.70m			
Remarks Hand dug inspection pit to 1.20m to check for buried services. On completion the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 2.7m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m, 76mm to 2.7m.							Scale (approx) 1:25	Logged By SS/JB	
							Figure No. 7782.M4		

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Number M5	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782	
		Location AS PLAN		Dates 07/08/2023		Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	B				(0.50)	MADE GROUND: light brown occasionally orange gravelly very silty clayey fine to coarse sand with low cobble sized fragments of brick and sandstone. Gravel sized fragments are angular to subrounded fine to coarse of sandstone and brick. Occasional rootlets up to 2mm in size and plastic are present.			
0.50-1.20	B				0.50 (0.70)	MADE GROUND: light brown, yellowish brown and orange gravelly very silty clayey fine to coarse sand. Gravel sized fragments are angular to subangular fine to coarse of stone, brick and sandstone.			
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20	MADE GROUND: dark brown gravelly sandy slightly silty clay. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse stone, brick, coal and tiles.			
2.00-3.00	C		2.00m to 3.00m - 45% recovery		(1.80)				
3.00-4.00	C		3.00m to 4.00m - 75% recovery		3.00 (0.30) 3.30 (0.70)	MADE GROUND: brownish grey and dark grey gravelly sandy clayey silt. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to medium of stone and brick.			
						MADE GROUND: dark grey slightly clayey silty sandy subangular to subrounded fine to coarse gravel of stone. Sand is fine to medium.			
			07/08/2023: DRY		4.00	Complete at 4.00m			
Remarks Hand dug inspection pit to 1.20m to check for buried services. On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 4.0m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m, 76mm to 3.0m, 66mm to 4.0m.							Scale (approx) 1:25	Logged By WJP/JB	
							Figure No. 7782.M5		

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907					Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Number M6		
Excavation Method MINI PERCUSSIVE		Dimensions Location AS PLAN		Ground Level (mOD) Dates 07/08/2023		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782	
						Engineer 		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.05-1.20	B				(1.20)	MADE GROUND: turf over dark grey gravelly silty clayey fine to coarse sand. Gravel sized fragments are angular to subrounded fine to coarse of brick and stone.			
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20 (0.80)	MADE GROUND: dark grey gravelly silty clayey medium sand with low cobble sized fragments of stone. Gravel sized fragments are fine to coarse stone, brick and coal. Occasional rootlets present.			
2.00-3.00	C		2.00m to 3.00m - 80% recovery		2.00 (0.40) 2.40 (0.40) 2.80	MADE GROUND: dark grey gravelly silty slightly clayey fine to medium sand. Gravel sized fragments are fine to coarse brick, stone, coal and glass. ...below 2.30m: becoming greyish brown and brown. MADE GROUND: greyish brown, grey and orangish brown gravelly silty slightly clayey medium sand with occasional cobble sized fragments of stone. Gravel sized fragments are subangular to subrounded fine to coarse stone and coal.			
3.00-4.00	C		3.00m to 4.00m - 70% recovery		(1.20) 4.00	MADE GROUND: brownish grey very gravelly silty clayey fine to medium sand. Gravel sized fragments are fine to coarse sandstone with occasional plant matter. Strong organic odour present. Complete at 4.00m			
Remarks Hand dug inspection pit to 1.20m to check for buried services. On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 4.0m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m, 76mm to 3.0m, 66mm to 4.0m.							Scale (approx) 1:25	Logged By WJP/JB	
							Figure No. 7782.M6		

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB			Number M7	
Excavation Method MINI PERCUSSIVE		Dimensions Location AS PLAN		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782		
				Dates 08/08/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr	
0.00-0.10	B				(0.10)	MADE GROUND: bituminous macadam				
0.10-1.20	B				(1.10)	MADE GROUND: orangish brown, brown and orange gravelly silty fine to coarse sand with occasional pockets of soft very sandy silt. Gravel sized fragments are angular to subrounded fine to coarse brick and sandstone.				
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20	MADE GROUND: yellowish brown and brown slightly silty very sandy subangular to subrounded fine to coarse gravel of sandstone. Sand is fine to coarse. ...between 1.20m to 2.00m: cobble sized fragments of sandstone present				
2.00-2.80	C		2.00m to 2.80m - 100% recovery		(1.40)					
					2.60	Light brown sandy subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.				
					(0.20)					
			08/08/2023: DRY		2.80	Complete at 2.80m				
Remarks Hand dug inspection pit to 1.20m to check for buried services. On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 2.8m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m, 76mm to 2.8m							Scale (approx) 1:25	Logged By WJP/JB	Figure No. 7782.M7	

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907					Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Number M8		
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782	
		Location AS PLAN		Dates 08/08/2023		Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10-0.30	B				(0.10)	MADE GROUND: bituminous macadam			
					(0.20)	MADE GROUND: dark brown, orange and yellowish brown gravelly silty fine to coarse sand. Gravel sized fragments are angular to subangular fine to coarse of brick.			
0.30-1.20	B				0.30	MADE GROUND: dark brown and yellowish brown very gravelly silty fine to coarse sand. Gravel is angular to subangular fine to coarse of brick and sandstone.			
					(0.90)				
1.20-2.00	C		1.20m to 2.00m - 100% recovery		1.20	MADE GROUND: dark grey slightly gravelly silty fine to medium sand. Gravel sized fragments are fine to coarse brick and stone.			
					(0.20)	MADE GROUND: dark grey slightly sandy silt. Sand is fine to coarse. Organic odour present.			
					1.40				
					(0.30)	MADE GROUND: dark grey slightly clayey slightly silty sandy subangular to subrounded fine to coarse gravel of sandstone. Sand is fine to coarse.			
					1.70				
					(0.30)				
			18/08/2023: DRY		2.00	Complete at 2.00m			
Remarks Hand dug inspection pit to 1.20m to check for services. On completion, the borehole was installed with a 50mm dia HDPE standpipe with a gravel surround to 2.0m, a bentonite seal from 0.20m to 1.0m and secured with a steel flush cover concreted to ground level. No groundwater encountered. Core diameter: 86mm to 2.0m.							Scale (approx) 1:25	Logged By WJP/JB	
							Figure No. 7782.M8		



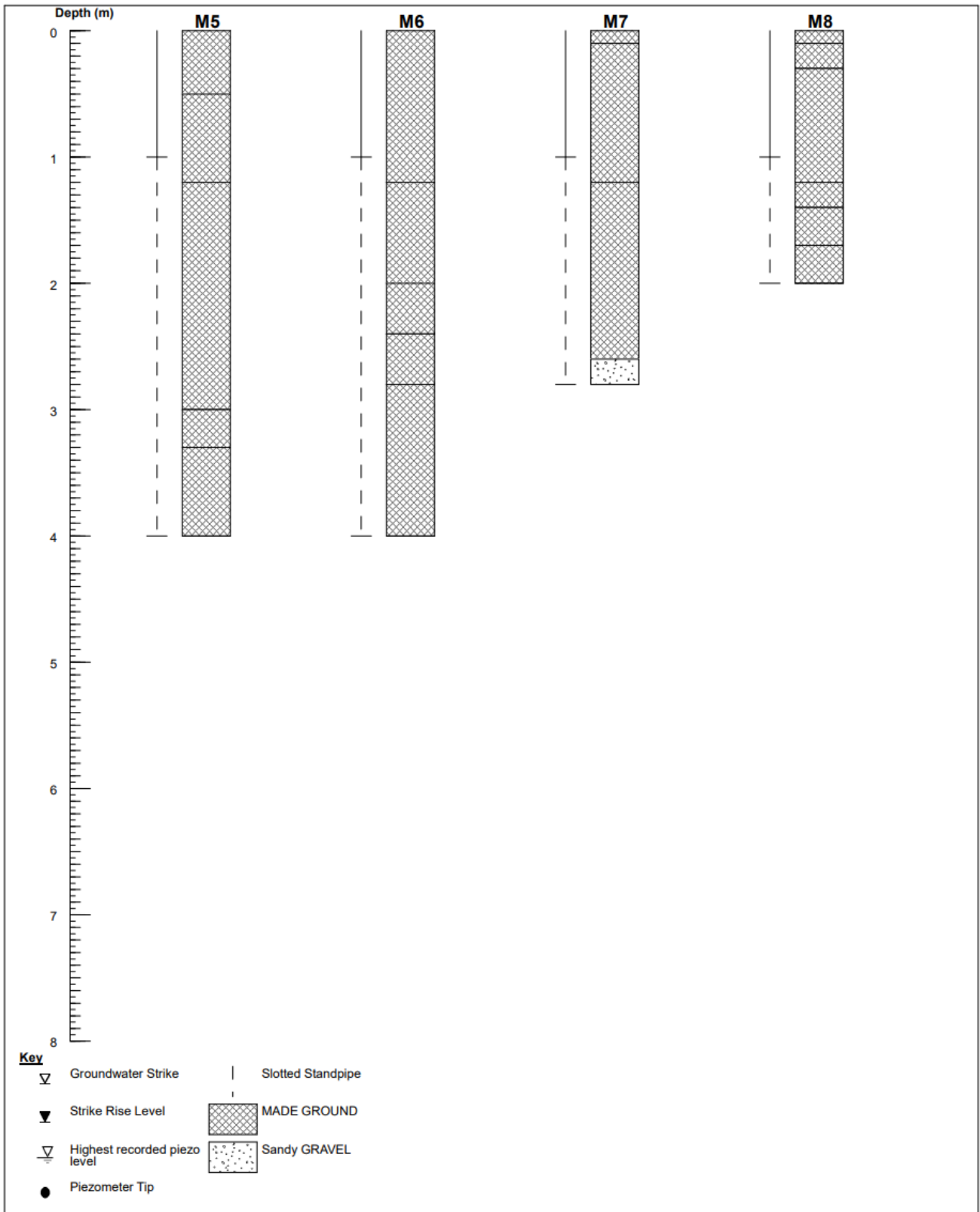
SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Nominal Section

Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB	Date Drawn 04/10/2023	Date Checked	Sheet 1/2	Job Number 7782
Client MERE DEVELOPMENT GROUP LIMITED	Drawn By	Checked By	Scale 1:40[V]	Figure No. 7782.1

Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved



SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site		Nominal Section		
SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Date Drawn 04/10/2023	Date Checked	Sheet 2/2
Client MERE DEVELOPMENT GROUP LIMITED		Drawn By	Checked By	Job Number 7782
				Scale 1:40[V]
				Figure No. 7782.1

Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved

4.9. Borehole Investigation Logs 06.10.2023 - 13.10.2023

 SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907						Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M09		
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 06/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B			06/10/2023:0.00m		(0.30)	MADE GROUND : greyish brown rarely speckled orange sandy gravelly clayey silt with frequent rootlets present. Sand is fine to coarse. Gravel sized fragments are angular to rounded fine to coarse of sandstone, stone and occasionally brick.			
0.30-1.20	B					0.30	MADE GROUND : dark brown, black and orangish red sandy silty angular to rounded fine to coarse gravel sized fragments of brick, stone and sandstone with medium cobble sized fragments of brick present. Sand is fine to coarse. ...0.30m to 1.20m becoming sandy very silty gravel			
1.20-2.00	B					(2.10)	...1.20m to 2.00m becoming very sandy silty gravel with occasional metal nails and glass fragments present.			
2.00-2.40	C			2.00m to 2.40m - 100% Recovery		2.40	...2.30m to 2.40m gravel sized fragments are angular to subrounded fine to coarse of sandstone. Complete at 2.40m			
Remarks Hand dug inspection pit from GL to 1.20m to check for services. Core diameter: 86mm to 2.40m. Groundwater rose to ground level during drilling works. On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 2.40m, a bentonite seal from 0.20m to 1.40m and secured with a metal flush cover concreted from 0.20m to ground level.								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7782A.M9		

Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved

SS SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907						Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M10		
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 06/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B			06/10/2023:0.60m			MADE GROUND : dark greyish brown, dark brown speckled orange and yellowish brown sandy silty angular to subrounded fine to coarse gravel sized fragments of brick, stone and sandstone. Low cobble sized fragments of brick present.			
0.30-1.20	B					(1.20)	...0.30m to 1.20m becoming very sandy very silty gravel.			
1.20-2.00	C			1.20m to 2.00m - 100% Recovery		1.20	MADE GROUND : black, grey, orange and brown sandy silty angular to subrounded fine to coarse gravel sized fragments of brick, stone and sandstone. Occasional fragments of glass, clay tiling, plastic wiring and metal present.			
						(0.59)				
						1.79	Light brown very silty very sandy subangular to rounded fine to coarse GRAVEL sized fragments of sandstone. Sand is fine to coarse.			
						(0.21)				
						2.00	Complete at 2.00m			
Remarks Hand dug inspection pit from GL to 1.20m to check for services. Core diameter: 86mm to 2.00m. Groundwater rose to 0.60m during drilling works. On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 2.00m , a bentonite seal from 0.20m to 1.00m and secured with a metal flush cover concreted from 0.20m to ground level.								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7782A.M10		

 SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907							Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M11	
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 06/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.20	B					(0.30)	MADE GROUND : brown speckled orange gravelly very sandy clayey silt. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse, predominantly fine to medium of brick, sandstone and stone. Rare rootlets present.			
0.30-1.30	B					0.30	MADE GROUND : dark brown, light brown and dark orangish red very sandy clayey angular to subrounded fine to coarse gravel sized fragments of brick, sandstone and stone. Sand is fine to coarse. Occasional pockets of soft brown gravelly clay present. High cobble sized fragments of brick present.			
1.40	D			06/10/2023: DRY		1.30 (0.10) 1.40	Light orangish brown speckled black and brownish grey COBBLE sized fragments of fine to coarse grained sandstone and angular to subrounded fine to coarse GRAVEL sized fragments of sandstone. Complete at 1.40m			
Remarks Hand dug inspection pit from GL to 1.20m to check for services. Borehole remained dry during drilling works. On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 1.40m, a bentonite seal from 0.20m to 0.50m and secured with a metal flush cover concreted from 0.20m to ground level.								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7782A.M11		

 SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907							Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M12	
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 06/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.70	B					0.10 0.10	MADE GROUND : dark grey bituminous macadam hardstanding.			
						0.60	MADE GROUND : dark brown speckled orange very sandy silty angular to subrounded fine to coarse gravel sized fragments of brick, sandstone and stone. Sand is fine to coarse.			
0.70-1.20	B					0.70 0.50	MADE GROUND : soft grey mottled yellowish brown speckled reddish brown slightly sandy very gravelly silty clay. Sand is fine. Gravel sized fragments are angular to subrounded fine to coarse of brick and stone.			
1.20-2.00	C			1.20m to 2.00m - 77% Recovery HV at 1.31m c=30kPa HV at 1.48m c= 28kPa		1.20 0.41	POSSIBLE MADE GROUND : soft low strength light brown and orangish brown speckled black and grey gravelly silty clay. Gravel sized fragments are angular to subrounded fine to coarse of sandstone and mudstone.			
						1.61 0.20	POSSIBLE MADE GROUND : soft dark brown, black and dark reddish brown peaty organic silt. Rare partially decomposing rootlets present and no water present on squeezing.			
						1.81 0.19	POSSIBLE MADE GROUND : soft brown, orangish brown, greyish brown and black sandy very gravelly silty clay.			
2.00-3.00	C			2.00m to 3.00m - 75% Recovery HV at 2.15m c=16kPa		2.00 0.17	POSSIBLE MADE GROUND : gravelly sandy peaty organic silt.			
						2.17 0.53	POSSIBLE MADE GROUND : soft very low strength brown, dark grey and light brown gravelly sandy silty clay with occasional silty sand lenses up to 10mm in thickness present. Sand is fine to coarse. Gravel sized fragments are angular to predominantly subrounded fine to coarse of sandstone.			
						2.70 0.30	POSSIBLE MADE GROUND : soft dark grey organic silt.			
3.00-4.00	C			3.00m to 4.00m - 37% Recovery		3.00	NO RECOVERY			
						0.64				
						3.64 0.36	Light brown and dark reddish brown COBBLE sized fragments of fine to medium grained sandstone and soft slightly gravelly very sandy silty CLAY. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of sandstone.			
				06/10/2023: DRY		4.00	Complete at 4.00m			
Remarks Hand dug inspection pit from GL to 1.20m to check for services. HV = Hand Shear Vane Test Core diameter: 86mm to 2.00m, 76mm to 3.00m and 66mm to 4.00m. Borehole remained dry during drilling works. On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 4.00m, a bentonite seal from 0.20m to 1.00m and secured with a metal flush cover concreted from 0.20m to ground level.								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7782A.M12		

 SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907							Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M13	
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 13/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10-1.00	C			0.10m to 1.00m - 88% Recovery		(0.10) 0.10	MADE GROUND : dark grey bituminous macadam hardstanding.			
						(0.28) 0.38	MADE GROUND : dark greyish brown slightly sandy silty angular to subrounded predominantly angular fine to coarse gravel sized fragments of mixed lithologies including sandstone, siltstone and stone. Sand is fine to coarse.			
						(0.62)	MADE GROUND : soft very low strength greyish brown speckled orangish brown and rarely black gravelly very sandy silty clay. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of sandstone.			
1.00-2.00	C			HV at 0.80m c=18kPa HV at 0.96m c=20kPa 1.00m to 2.00m - 75% Recovery		1.00	MADE GROUND : soft greyish brown and light brown gravelly sandy silty clay with low cobble sized fragments of sandstone. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of stone and sandstone.			
						(0.33) 1.33	...between 1.22m to 1.33m light orangish brown and brown cobble sized fragments of medium to coarse grained sandstone.			
				HV at 1.60m c=26kPa		(0.46) 1.79	MADE GROUND : soft to firm low strength greyish brown speckled orange very gravelly sandy silty clay. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of sandstone, stone and brick. ...between 1.61m to 1.79m: slightly sandy with occasional fragments of clinker and coal present			
2.00-3.00	C			2.00m to 3.00m - 53% Recovery		(0.68)	NO RECOVERY			
						2.47	MADE GROUND : soft very low strength dark greyish brown, dark brown and light brown gravelly sandy silty clay. Sand is fine to coarse. Gravel sized fragments are angular to rounded fine to coarse of mixed lithologies including stone, brick and sandstone. Occasional pieces of textile fabric and rare fragments of glass present.			
				HV at 2.58m c=16kPa		(0.53)	...between 2.96m to 3.00m low cobble sized fragment of concrete.			
3.00-4.00	C			HV at 2.88m c=16kPa 3.00m to 4.00m - 57% Recovery		3.00	NO RECOVERY			
						(0.43)	POSSIBLE MADE GROUND : light brown, light greyish brown occasionally speckled dark orangish brown very gravelly slightly silty fine to coarse sand. Gravel sized fragments are subangular to rounded fine to coarse of sandstone. ...between 3.43m to 3.50m: soft to firm gravelly sandy silty clay.			
				HV at 3.79m c=14kPa HV at 3.96m c=12kPa 13/10/2023: DRY		(0.28) 3.71 (0.29) 4.00	Soft very low strength locally stiff brown and light brown speckled orangish brown gravelly sandy silty CLAY. Sand is fine to coarse. Gravel sized fragments are subangular to rounded fine to coarse of sandstone. ...between 3.84m to 3.89m thin band of very sandy subangular to subrounded fine to coarse gravel of sandstone.			
							Complete at 4.00m			

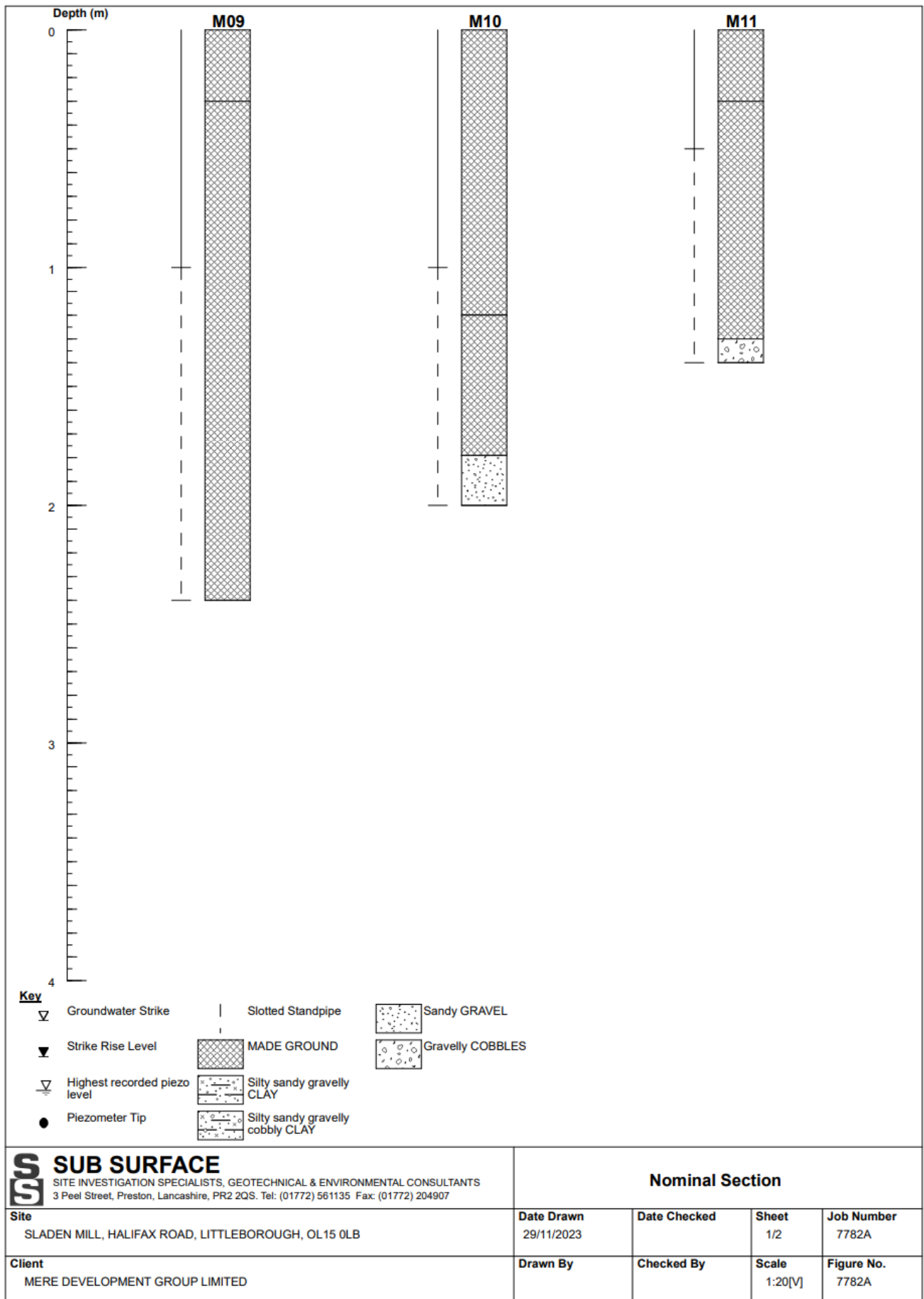
Remarks
 Hand dug inspection pit from GL to 1.20m to check for services.
 HV = Hand Shear Vane Test
 Core diameter: 86mm to 1.00m, 86mm to 2.00m, 76mm to 3.00m and 66mm to 4.00m.
 Borehole remained dry during drilling works.
 On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 4.00m, a bentonite seal from 0.20m to 1.00m and secured with a metal flush cover concreted from 0.20m to ground level.

Scale (approx)
 1:25

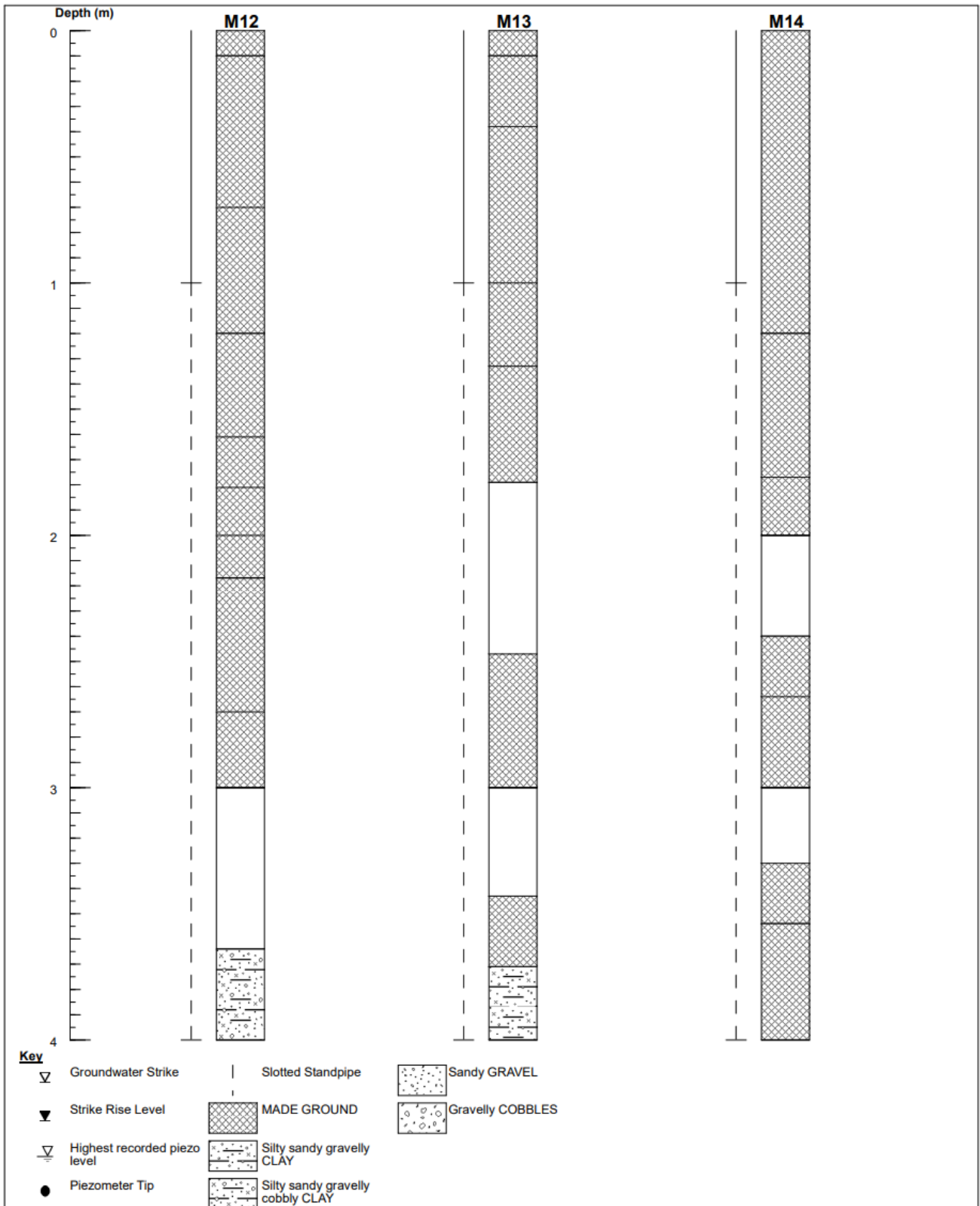
Logged By
 DB/HB

Figure No.
 7782A.M13

 SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907							Site SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB		Borehole Number M14	
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MERE DEVELOPMENT GROUP LIMITED		Job Number 7782A		
		Location AS PLAN		Dates 06/10/2023		Engineer		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	B			06/10/2023:3.00m			MADE GROUND : soft dark greyish brown mottled light brown speckled reddish brown slightly sandy gravelly clayey silt. Sand is fine. Gravel sized fragments are angular to subrounded fine to coarse of brick, sandstone and stone. Rare pieces of metal wiring present.			
0.50-1.20	B					(1.20)	... between 0.50m to 1.20m: dark brown speckled orange sandy very gravelly clayey silt.			
1.20-2.00	C			1.20m to 2.00m - 66% Recovery		1.20	MADE GROUND : brown, red and grey very sandy very clayey angular to subrounded fine to coarse gravel sized fragments of brick and stone. Sand is fine to coarse.			
						(0.57)				
2.00-3.00	C			2.00m to 3.00m - 60% Recovery		1.77	MADE GROUND : brown, light orangish brown and white very sandy clayey angular to subrounded fine to coarse gravel sized fragments of stone, sandstone and possible white asbestos (chrysotile) present. Sand is fine to coarse.			
						(0.23)				
						2.00	NO RECOVERY			
						(0.40)				
						2.40	MADE GROUND : dark brownish grey, brown and orangish red very sandy clayey gravel.			
						(0.24)				
						2.64	MADE GROUND : soft dark greyish brown speckled orange slightly sandy slightly gravelly clayey organic silt. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of brick, stone and sandstone.			
						(0.36)				
3.00-4.00	C			3.00m to 4.00m - 73% Recovery		3.00	...between 2.64m to 2.79m: silty very sandy. Rare glass.			
						(0.30)	...between 2.79m to 2.88m: abundant metal wiring.			
						3.30	NO RECOVERY			
						(0.24)	MADE GROUND : soft brown and orangish red very gravelly sandy silty clay. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of brick and stone.			
						3.54	POSSIBLE MADE GROUND : dark grey and greenish grey slightly sandy gravelly organic silt. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of sandstone. Strong organic odour.			
						(0.46)				
						4.00	Complete at 4.00m			
Remarks Hand dug inspection pit from GL to 1.20m to check for services. Core diameter: 86mm to 2.00m, 76mm to 3.00m and 66mm to 4.00m. Groundwater stabilised at 3.00m during drilling. On completion, the borehole was installed using a slotted 50mm dia HDPE standpipe with a gravel surround to 4.00m, a bentonite seal from 0.20m to 1.00m and secured with a metal flush cover concreted from 0.20m to ground level.								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7782A.M14		



Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved

**SUB SURFACE**

SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Nominal Section				
Site	Date Drawn	Date Checked	Sheet	Job Number
SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB	29/11/2023		2/2	7782A
Client	Drawn By	Checked By	Scale	Figure No.
MERE DEVELOPMENT GROUP LIMITED			1:20[V]	7782A

Produced by the GEOTECHNICAL DATABASE SYSTEM (GEODASY) © all rights reserved

4.10. Certification - Trial Hole & Soil Sampling Investigation 24.03.2022



Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-11596-2	Date of Re-Issue:	01-Apr-2022
Initial Date of Issue:	01-Apr-2022		
Client	TJ Booth Associates		
Client Address:	20a Eastgate Street Rochdale Lancs OL16 1DH		
Contact(s):	Daniel Slattery		
Project	Mainly - Sladen Mill		
Quotation No.:	Q22-27132	Date Received:	28-Mar-2022
Order No.:		Date Instructed:	28-Mar-2022
No. of Samples:	9		
Turnaround (Wkdays):	5	Results Due:	01-Apr-2022
Date Approved:	01-Apr-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: Mainly - Sladen Mill																													
Client: TJ Booth Associates		Chemtest Job No.:		Chemtest Sample ID.:		Client Sample ID.:		Sample Location:		Sample Type:		Top Depth (m):		Date Sampled:		Asbestos Lab:		Accred.		SOP		Units		LOD		Determinand		ACM Type	
Quotation No. : Q22-27132		1399858		1399859		S1		TH1		SOIL		0.5		24-Mar-2022		DURHAM		U		2192		%		N/A		Asbestos Identification		ACM Type	
		No Asbestos Detected		No Asbestos Detected		18		14		8.5		1.20		24-Mar-2022		DURHAM		N		2030		%		0.020		Moisture			
		8.4		8.5		8.4		0.84		0.84		0.5		24-Mar-2022		DURHAM		U		2010		mg/kg		4.0		pH			
		1.7		0.84		77		140		14		0.5		24-Mar-2022		DURHAM		U		2120		mg/kg		0.40		Boron (Hot Water Soluble)			
		< 0.50		< 0.50		< 0.50		< 0.50		< 0.50		0.50		24-Mar-2022		DURHAM		U		2180		mg/kg		1.0		Sulphur (Elemental)			
		< 5.0		< 5.0		< 5.0		< 5.0		< 5.0		5.0		24-Mar-2022		DURHAM		U		2300		mg/kg		5.0		Cyanide (Total)			
		29		23		21		1500		4.6		0.50		24-Mar-2022		DURHAM		N		2325		mg/kg		0.50		Thiocyanate			
		2200		1500		15		1500		15		100		24-Mar-2022		DURHAM		U		2430		mg/kg		1.0		Sulphide (Easily Liberatable)			
		0.35		0.34		18		15		20		1.0		24-Mar-2022		DURHAM		U		2450		mg/kg		0.10		Arsenic			
		95		25		39		20		32		14		24-Mar-2022		DURHAM		U		2450		mg/kg		1.0		Chromium			
		0.19		0.14		0.38		0.37		0.29		0.28		24-Mar-2022		DURHAM		U		2450		mg/kg		0.50		Copper			
		56		17		25		170		20		24		24-Mar-2022		DURHAM		U		2450		mg/kg		0.50		Mercury			
		70		76		170		170		20		3900		24-Mar-2022		DURHAM		U		2450		mg/kg		0.50		Nickel			
		1.5		0.31		0.50		0.50		0.36		0.24		24-Mar-2022		DURHAM		U		2450		mg/kg		0.20		Lead			
		63		99		120		120		90		120		24-Mar-2022		DURHAM		U		2450		mg/kg		0.50		Selenium			
		< 0.50		< 0.50		< 0.50		< 0.50		< 0.50		< 0.50		24-Mar-2022		DURHAM		N		2490		mg/kg		0.50		Zinc			
		28		52		7.4		7.4		11		11		24-Mar-2022		DURHAM		U		2625		%		0.40		Chromium (Hexavalent)			
		N		< 1.0										24-Mar-2022		DURHAM		N		2680		mg/kg		1.0		Organic Matter			
		N		5.2										24-Mar-2022		DURHAM		N		2680		mg/kg		1.0		Aliphatic TPH >C5-C6			
		N		110										24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C6-C8			
		160		1100										24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C8-C10			
		1500												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C10-C12			
		710												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C12-C16			
		< 1.0												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C16-C21			
		3600												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aliphatic TPH >C21-C35			
		< 1.0												24-Mar-2022		DURHAM		N		2680		mg/kg		5.0		Total Aliphatic Hydrocarbons			
		30												24-Mar-2022		DURHAM		N		2680		mg/kg		1.0		Aromatic TPH >C5-C7			
		16												24-Mar-2022		DURHAM		N		2680		mg/kg		1.0		Aromatic TPH >C7-C8			
		200												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aromatic TPH >C8-C10			
		200												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aromatic TPH >C10-C12			
		500												24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aromatic TPH >C12-C16			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aromatic TPH >C16-C21			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Aromatic TPH >C21-C35			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Fibres(Clumps)			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		Chrysotile			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680		mg/kg		1.0		No Asbestos Detected			
														24-Mar-2022		DURHAM		U		2680									

Results - Soil

Project: Mainly - Sladen Mill									
Client: T J Booth Associates									
Quotation No.: Q22-27132									
Chemtest Job No.:		Chemtest Sample ID.:		Client Sample ID.:		Sample Location:		Sample Type:	
22-11596		1399858		S1		TH1		SOIL	
22-11596		1399859		S2		TH2		SOIL	
22-11596		1399860		S3		TH3		SOIL	
22-11596		1399861		S4		TH4		SOIL	
22-11596		1399862		S5		TH5		SOIL	
22-11596		1399863		S6		TH6		SOIL	
22-11596		1399864		S7		TH7		SOIL	
22-11596		1399865		S9		TH9		SOIL	
22-11596		1399866		S10		TH10		SOIL	
22-11596		1399867		S11		TH11		SOIL	
22-11596		1399868		S12		TH12		SOIL	
22-11596		1399869		S13		TH13		SOIL	
22-11596		1399870		S14		TH14		SOIL	
22-11596		1399871		S15		TH15		SOIL	
22-11596		1399872		S16		TH16		SOIL	
22-11596		1399873		S17		TH17		SOIL	
22-11596		1399874		S18		TH18		SOIL	
22-11596		1399875		S19		TH19		SOIL	
22-11596		1399876		S20		TH20		SOIL	
22-11596		1399877		S21		TH21		SOIL	
22-11596		1399878		S22		TH22		SOIL	
22-11596		1399879		S23		TH23		SOIL	
22-11596		1399880		S24		TH24		SOIL	
22-11596		1399881		S25		TH25		SOIL	
22-11596		1399882		S26		TH26		SOIL	
22-11596		1399883		S27		TH27		SOIL	
22-11596		1399884		S28		TH28		SOIL	
22-11596		1399885		S29		TH29		SOIL	
22-11596		1399886		S30		TH30		SOIL	
22-11596		1399887		S31		TH31		SOIL	
22-11596		1399888		S32		TH32		SOIL	
22-11596		1399889		S33		TH33		SOIL	
22-11596		1399890		S34		TH34		SOIL	
22-11596		1399891		S35		TH35		SOIL	
22-11596		1399892		S36		TH36		SOIL	
22-11596		1399893		S37		TH37		SOIL	
22-11596		1399894		S38		TH38		SOIL	
22-11596		1399895		S39		TH39		SOIL	
22-11596		1399896		S40		TH40		SOIL	
22-11596		1399897		S41		TH41		SOIL	
22-11596		1399898		S42		TH42		SOIL	
22-11596		1399899		S43		TH43		SOIL	
22-11596		1399900		S44		TH44		SOIL	
22-11596		1399901		S45		TH45		SOIL	
22-11596		1399902		S46		TH46		SOIL	
22-11596		1399903		S47		TH47		SOIL	
22-11596		1399904		S48		TH48		SOIL	
22-11596		1399905		S49		TH49		SOIL	
22-11596		1399906		S50		TH50		SOIL	
22-11596		1399907		S51		TH51		SOIL	
22-11596		1399908		S52		TH52		SOIL	
22-11596		1399909		S53		TH53		SOIL	
22-11596		1399910		S54		TH54		SOIL	
22-11596		1399911		S55		TH55		SOIL	
22-11596		1399912		S56		TH56		SOIL	
22-11596		1399913		S57		TH57		SOIL	
22-11596		1399914		S58		TH58		SOIL	
22-11596		1399915		S59		TH59		SOIL	
22-11596		1399916		S60		TH60		SOIL	
22-11596		1399917		S61		TH61		SOIL	
22-11596		1399918		S62		TH62		SOIL	
22-11596		1399919		S63		TH63		SOIL	
22-11596		1399920		S64		TH64		SOIL	
22-11596		1399921		S65		TH65		SOIL	
22-11596		1399922		S66		TH66		SOIL	
22-11596		1399923		S67		TH67		SOIL	
22-11596		1399924		S68		TH68		SOIL	
22-11596		1399925		S69		TH69		SOIL	
22-11596		1399926		S70		TH70		SOIL	
22-11596		1399927		S71		TH71		SOIL	
22-11596		1399928		S72		TH72		SOIL	
22-11596		1399929		S73		TH73		SOIL	
22-11596		1399930		S74		TH74		SOIL	
22-11596		1399931		S75		TH75		SOIL	
22-11596		1399932		S76		TH76		SOIL	
22-11596		1399933		S77		TH77		SOIL	
22-11596		1399934		S78		TH78		SOIL	
22-11596		1399935		S79		TH79		SOIL	
22-11596		1399936		S80		TH80		SOIL	
22-11596		1399937		S81		TH81		SOIL	
22-11596		1399938		S82		TH82		SOIL	
22-11596		1399939		S83		TH83		SOIL	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils (Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description (Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44 Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)* please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information**Key**

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 22-12266-1
Initial Date of Issue: 05-Apr-2022
Client: TJ Booth Associates
Client Address: 20a Eastgate Street
Rochdale
Lancs
OL16 1DH
Contact(s): Daniel Slattery
Project: Mainly - Sladen Mill
Quotation No.: Q22-27132
Date Received: 31-Mar-2022
Order No.:
Date Instructed: 31-Mar-2022
No. of Samples: 1
Turnaround (Wkdays): 5
Results Due: 06-Apr-2022
Date Approved: 05-Apr-2022
Approved By:

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: Mainly - Sladen Mill		Chemtest Job No.:		22-12266	
Client: TJ Booth Associates		Chemtest Sample ID.:		1403086	
Quotation No.: Q22-27132		Client Sample ID.:		S8	
		Sample Location:		TH7	
		Sample Type:		SOIL	
		Top Depth (m):		2.50	
		Date Sampled:		24-Mar-2022	
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	16
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	13
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	14
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	1400
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	26000
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	46
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	27000
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	92
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	2800
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	6100
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	330
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	9400
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	37000
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2680	TPH A/A Split	Aliphatics: >C5-C8, >C8-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8- C10, >C10-C12, >C12-C16, >C16- C21, >C21- C35, >C35- C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Report Information**Key**

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

4.11. Certification - Trial Hole & Preliminary Ground/Surface Water Investigation
20.07.2023Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/07360

Issue Number: 1

Date: 07 August, 2023

Client: T J Booth Associates
20a East Gate Street
Rochdale
Rochdale
Greater Manchester
UK
OL16 1DH

Project Manager: Daniel Slattery
Project Name: Mere Group - Sladen Mill
Project Ref: Not specified
Order No: N/A
Date Samples Received: 21/07/23
Date Instructions Received: 24/07/23
Date Analysis Completed: 07/08/23

Approved by:Richard Wong
Client Manager

1247

Page 1 of 7



Envirolab Job Number: 23/07360

Client Project Name: Mere Group - Sladen Mill

Client Project Ref: Not specified

Lab Sample ID	23/07360/1	23/07360/2	23/07360/3	23/07360/4	23/07360/5	23/07360/6		Units	Limit of Detection	Method ref
Client Sample No	GWS1	GWS2	GWS3	WS1	WS2	WS3				
Client Sample ID	TH16	TH17	TH18	River	River	River				
Depth To Top	2.10	2.10	3.00							
Depth To Bottom										
Date Sampled	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23				
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - EW	WATER - EW	WATER - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
pH (w) _A ^o	7.30	7.48	7.21	7.12	7.01	6.93		pH	0.01	A-T-021w
Hardness Total _A ^o	664	303	697	31	30	27		mg/l Ca CO ₃	2	A-T-040w
Sulphate (w) _A ^o	414	114	473	9	9	9		mg/l	1	A-T-026w
Cyanide (total) (w) _A ^o	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		mg/l	0.005	A-T-042w/TCN
Phenols - Total by HPLC (w) _A	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01		mg/l	0.01	A-T-050w
DOC - Dissolved Organic Carbon (w) _A ^o	6.2	6.3	10.7	6.1	6.3	6.6		mg/l	2	A-T-032w
Arsenic (dissolved) _A ^o	<1	<1	1	<1	<1	<1		µg/l	1	A-T-025w
Cadmium (dissolved) _A ^o	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		µg/l	0.2	A-T-025w
Copper (dissolved) _A	<4	<4	<4	<4	<4	<4		µg/l	4	A-T-025w
Chromium (dissolved) _A ^o	6	<1	<1	6	6	3		µg/l	1	A-T-025w
Chromium (hexavalent) (w) _A ^o	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/l	0.01	A-T-040w
Lead (dissolved) _A ^o	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-025w
Mercury (dissolved) _A ^o	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		µg/l	0.1	A-T-025w
Nickel (dissolved) _A ^o	4	<2	9	2	3	2		µg/l	2	A-T-025w
Selenium (dissolved) _A ^o	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-025w
Sulphur, Total (dissolved) _A	152	43	177	5	4	4		mg/l	1	A-T-072w
Zinc (dissolved) _A ^o	16	2	81	3	23	4		µg/l	2	A-T-025w



Envirolab Job Number: 23/07360

Client Project Name: Mere Group - Sladen Mill

Client Project Ref: Not specified

Lab Sample ID	23/07360/1	23/07360/2	23/07360/3	23/07360/4	23/07360/5	23/07360/6		Units	Limit of Detection	Method ref
Client Sample No	GWS1	GWS2	GWS3	WS1	WS2	WS3				
Client Sample ID	TH16	TH17	TH18	River	River	River				
Depth to Top	2.10	2.10	3.00							
Depth To Bottom										
Date Sampled	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23				
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - EW	WATER - EW	WATER - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
PAH 16MS (w)										
Acenaphthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Acenaphthylene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Anthracene (w) _A ^g	<0.01	<0.01	0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) _A ^g	<0.01 ^U	<0.01 ^U	0.07 ^U	<0.01 ^U	<0.01 ^U	<0.01 ^U		µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) _A ^g	0.01	<0.01	0.09	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) _A ^g	<0.01	<0.01	0.09	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) _A ^g	<0.01	<0.01	0.05	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) _A ^g	<0.01	<0.01	0.03	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Chrysene (w) _A ^g	<0.01	<0.01	0.09	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) _A ^g	<0.01	<0.01	0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Fluoranthene (w) _A ^g	0.01	<0.01	0.16	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Fluorene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) _A ^g	<0.01	<0.01	0.06	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Naphthalene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Phenanthrene (w) _A ^g	<0.01	<0.01	0.05	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Pyrene (w) _A ^g	0.01	<0.01	0.15	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w
Total PAH 16MS (w) _A ^g	0.03	<0.01	0.86	<0.01	<0.01	<0.01		µg/l	0.01	A-T-019w



Envirolab Job Number: 23/07360

Client Project Name: Mere Group - Sladen Mill

Client Project Ref: Not specified

Lab Sample ID	23/07360/1	23/07360/2	23/07360/3	23/07360/4	23/07360/5	23/07360/6		Units	Limit of Detection	Method ref
Client Sample No	GWS1	GWS2	GWS3	WS1	WS2	WS3				
Client Sample ID	TH16	TH17	TH18	River	River	River				
Depth to Top	2.10	2.10	3.00							
Depth To Bottom										
Date Sampled	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23				
Sample Type	WATER - GW	WATER - GW	WATER - GW	WATER - EW	WATER - EW	WATER - EW				
Sample Matrix Code	N/A	N/A	N/A	N/A	N/A	N/A				
TPH UKCWG (w) with Clean Up										
Ali >C5-C6 (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Ali >C6-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Ali >C8-C10 (w) _A ^g	<10	<10	<10	<10	<10	<10		µg/l	5	A-T-055w
Ali >C10-C12 (w) _A ^g	<10	<10	<10	<10	<10	<10		µg/l	5	A-T-055w
Ali >C12-C16 (w) _A ^g	<10	<10	<10	<10	<10	<10		µg/l	5	A-T-055w
Ali >C16-C21 (w) _A ^g	<10	<10	25	<10	<10	<10		µg/l	5	A-T-055w
Ali >C21-C35 (w) _A ^g	<10	<10	214	<10	<10	<10		µg/l	5	A-T-055w
Ali >C35-C44 (w) _A	<10	<10	29	<10	<10	<10		µg/l	5	A-T-055w
Total Aliphatics (w) _A	<10	<10	268	<10	<10	<10		µg/l	5	Calc-Aa Recd
Aro >C5-C7 (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Aro >C7-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
Aro >C8-C10 (w) _A	<10	<10	12	<10	<10	<10		µg/l	5	A-T-055w
Aro >C10-C12 (w) _A ^g	<10	<10	11	<10	<10	<10		µg/l	5	A-T-055w
Aro >C12-C16 (w) _A ^g	<10	<10	31	<10	<10	<10		µg/l	5	A-T-055w
Aro >C16-C21 (w) _A ^g	<10	<10	50	<10	<10	<10		µg/l	5	A-T-055w
Aro >C21-C35 (w) _A	<20	<20	33	<20	<20	<20		µg/l	10	A-T-055w
Aro >C35-C44 (w) _A	<10	<10	<10	<10	<10	<10		µg/l	5	A-T-055w
Total Aromatics (w) _A	<20	<20	137	<20	<20	<20		µg/l	10	Calc-Aa Recd
TPH (Ali & Aro >C5-C44) (w) _A	<20	<20	405	<20	<20	<20		µg/l	10	Calc-Aa Recd
BTEX - Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - Toluene (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - m & p Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
BTEX - o Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w
MTBE (w) _A ^g	<1	<1	<1	<1	<1	<1		µg/l	1	A-T-022w



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 **six 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 "A"	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°C / 11550µS/cm @ 20°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

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envirolab.co.uk

Client: T J Booth Associates, 20a East Gate Street, Rochdale, Rochdale, Greater Manchester, UK, OL16 1DH

Project: Mere Group - Sladen Mill
Clients Project No:

Project No: 23/07360
Date Received: 24/07/2023 (am)
Cool Box Temperatures (°C): 15.4

Lab Sample ID	23/07360/1	23/07360/2	23/07360/3	23/07360/4	23/07360/5	23/07360/6
Client Sample No	GWS1	GWS2	GWS3	WS1	WS2	WS3
Client Sample ID/Depth	TH16 2.10m	TH17 2.10m	TH18 3.00m	River	River	River
Date Sampled	20/07/23	20/07/23	20/07/23	20/07/23	20/07/23	20/07/23
Deviation Code						
B1 (no VPH)	✓	✓	✓	✓		✓
A7 (no HNO3)	✓	✓	✓	✓	✓	✓
A9 (no H2SO4)	✓	✓	✓	✓	✓	✓

Key

B1 (no VPH) Separate container not supplied for VPH/BTEX analysis
A7 (no HNO3) No HNO3 preserved bottle provided (dissolved metals will be deviating)
A9 (no H2SO4) No H2SO4 preserved bottle provided (phenols, ammonia, DOC, COD will be deviating)

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 $5 \pm 3^{\circ}\text{C}$), 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	23/07360/1	23/07360/2	23/07360/3	23/07360/4	23/07360/5	23/07360/6
Client Sample No	GWS1	GWS2	GWS3	WS1	WS2	WS3
Client Sample ID/Depth	TH16 2.10m	TH17 2.10m	TH18 3.00m	River	River	River
Date Sampled	20/07/23	20/07/23	20/07/23	20/07/23	20/07/23	20/07/23
A-T-019w	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023
A-T-022w	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023
A-T-025w	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023
A-T-026w	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-031w	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-032w	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-040w	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-042wTCN	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-049w	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023
A-T-050w	04/08/2023	04/08/2023	07/08/2023	07/08/2023	07/08/2023	07/08/2023
A-T-055w	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023	27/07/2023
A-T-072w	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023	31/07/2023
Calc-As Recd	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023	28/07/2023

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

4.12. Certification - Borehole & Soil Sampling Investigation 07.08.2023 - 08.08.2023.



Certificate Number 23-20667-0-1

Issued: 08-Dec-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-20667-0-1

Client Reference 7782

Order No (not supplied)

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Description 24 Soil samples.

Date Received 30-Aug-23

Date Started 30-Aug-23

Date Completed 08-Dec-23

Test Procedures Identified by prefix DETSn (details on request).

Notes This report supersedes 23-20667, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgwood".

Kirk Bridgwood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225790	2225791	2225792	2225793	2225794	2225795
Sample ID	M1	M1	M1	M2	M2	M2
Depth	1.20	2.00	2.60	1.20	2.00	3.00
Other ID	898	898	899	902	902	903
Sample Type	C	C	C	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%		< 0.001	0.011 0.003
Preparation						
Stones >10mm	DETSC 1003*	1	% m/m	6.0	4.0	7.0 11 23 20
Moisture Content	DETSC 1004	0.1	%	14	13	15 7.9 11 14
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	5.7	5.5	5.7 12 8.5 14
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2 0.2 0.3 0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2 0.5 0.3 0.3
Chromium	DETSC 2301#	0.15	mg/kg	13	14	16 15 21 14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0 < 1.0 < 1.0 < 1.0
Copper	DETSC 2301#	0.2	mg/kg	25	14	20 37 43 40
Lead	DETSC 2301#	0.3	mg/kg	50	9.8	15 84 37 50
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05 0.12 < 0.05 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.8	1.4	1.1 1.1 2.2 2.1
Nickel	DETSC 2301#	1	mg/kg	14	15	16 19 35 22
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5 < 0.5 < 0.5 < 0.5
Zinc	DETSC 2301#	1	mg/kg	55	71	45 78 78 67
Inorganics						
pH	DETSC 2008#		pH	7.4	5.4	6.1 7.8 8.6 9.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1 0.2 < 0.1 < 0.1
Organic matter	DETSC 2002#	0.1	%	1.0	1.3	0.9 2.0 2.7 2.4
Sulphide	DETSC 2024*	10	mg/kg	16	< 10	16 < 10 24 24
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75 < 0.75 < 0.75 < 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.11	0.11	0.03 0.03 0.05 0.07
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5 < 1.5 < 1.5 < 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2 < 1.2 < 1.2 < 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5 < 1.5 9.0 < 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4 < 3.4 120 < 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4 < 3.4 65 < 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10 < 10 190 < 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01 < 0.01 < 0.01 < 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9 < 0.9 < 0.9 < 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	1.6 < 0.5 3.3 < 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	10 < 0.6 20 < 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	46 < 1.4 190 < 1.4
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	30 < 1.4 130 < 1.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 2 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No .Sample ID Depth Other ID Sample Type Sampling Date Sampling Time	2225790	2225791	2225792	2225793	2225794	2225795			
	M1	M1	M1	M2	M2	M2			
	1.20	2.00	2.60	1.20	2.00	3.00			
	898	898	899	902	902	903			
	C	C	C	C	C	C			
	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023			
	n/s	n/s	n/s	n/s	n/s	n/s			
Test	Method	LOD	Units						
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	88	< 10	340	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	88	< 10	530	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.0	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	6.0	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.2	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	0.1	5.7	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	5.0	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.2	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.7	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.2	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	32	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 3 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Test	Method	LOD	Units	Lab No					
				Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time
Asbestos Quantification	DETSC 1102	0.001	%	0.007					
Preparation									
Stones >10mm	DETSC 1003*	1	% m/m	12	9.0	14	8.0	27	10
Moisture Content	DETSC 1004	0.1	%	18	21	12	16	9.5	15
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	20	7.3	9.4	21	7.8	36
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.2	< 0.2	< 0.2	0.3	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.2	0.3	0.4	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	18	13	16	18	13	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	72	22	65	74	26	110
Lead	DETSC 2301#	0.3	mg/kg	190	35	210	170	31	240
Mercury	DETSC 2325#	0.05	mg/kg	0.29	0.07	0.05	0.16	< 0.05	0.39
Molybdenum	DETSC 2301#	0.4	mg/kg	3.9	2.0	1.7	2.9	1.6	2.6
Nickel	DETSC 2301#	1	mg/kg	24	12	22	27	19	27
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	230	59	90	120	94	190
Inorganics									
pH	DETSC 2008#		pH	8.0	7.6	7.8	8.3	7.6	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.0	0.4	0.4	1.6	< 0.1	0.8
Organic matter	DETSC 2002#	0.1	%	3.2	1.3	2.3	4.5	3.5	4.5
Sulphide	DETSC 2024*	10	mg/kg	12	32	12	56	12	48
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.17	0.08	0.03	0.15	0.28	0.07
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	6.6	4.4	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	25	23	< 3.4	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	32	28	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	4.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	14	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	56	< 1.4	< 1.4	< 1.4
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	44	< 1.4	< 1.4	< 1.4

Key: * - not accredited. # - MCERTS (accreditation only applies if report carries the MCERTS logo). n/s - not supplied.

Page 4 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

	Lab No	Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time	2225796	2225797	2225798	2225799	2225800	2225801
								M3	M3	M4	M4	M4	M5
								1.20	2.00	1.20	2.00	2.70	1.20
								905	906	909	909	910	917
								C	C	C	C	C	C
								08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
								n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units										
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	120	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	150	28	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs													
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	0.1	0.1	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.6	0.3	0.3	0.4	0.2	0.4	0.2	0.4	0.2	0.4
Pyrene	DETSC 3301	0.1	mg/kg	0.5	0.2	0.2	0.3	0.1	0.3	0.2	0.4	0.2	0.4
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	0.4	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	0.2	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	0.1	0.5	0.8	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	0.4	0.4	0.4	< 0.1	0.4	< 0.1	0.4	< 0.1	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.3	0.1	0.2	0.2	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	2.8	< 1.6	2.2	2.8	< 1.6	2.1	< 1.6	2.1	< 1.6	2.1
Phenols													
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	0.5	0.5	< 0.3	0.5	< 0.3	0.5	< 0.3	0.5	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 5 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225802	2225803	2225804	2225805	2225806	2225807
Sample ID	M5	M5	M5	M6	M6	M6
Depth	2.00	3.00	3.75	1.20	2.00	3.00
Other ID	917	918	919	912	912	913
Sample Type	C	C	C	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.002	0.002		0.002	0.004	
Preparation									
Stones >10mm	DETSC 1003*	1	% m/m	6.0	5.0	9.0	18	15	8.0
Moisture Content	DETSC 1004	0.1	%	18	18	14	15	11	19
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	21	45	10	14	11	4.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.6	0.5	0.4	0.4	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.6	0.3	0.5	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg	23	24	16	17	13	11
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	120	91	60	71	84	20
Lead	DETSC 2301#	0.3	mg/kg	220	260	28	100	120	18
Mercury	DETSC 2325#	0.05	mg/kg	0.30	0.44	0.07	0.12	0.09	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	2.0	3.3	2.0	2.4	1.7	1.3
Nickel	DETSC 2301#	1	mg/kg	22	22	20	22	13	10
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	140	150	80	120	110	36
Inorganics									
pH	DETSC 2008#		pH	7.8	7.7	6.8	8.0	7.7	7.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	6.7	0.4	0.4	0.3	0.2
Organic matter	DETSC 2002#	0.1	%	4.9	5.0	4.4	4.5	5.5	3.7
Sulphide	DETSC 2024*	10	mg/kg	32	40	16	36	< 10	< 10
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.09	0.07	0.09	0.06	0.19	0.08
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	16	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	51	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	67	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	11	15	15	11	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	6.4	11	8.9	6.4	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	2.1	7.1	4.1	12	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	5.0	15	15	62	32
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	37	< 1.4	< 1.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 6 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

	Lab No	Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time	2225802	2225803	2225804	2225805	2225806	2225807
								M5	M5	M5	M6	M6	M6
								2.00	3.00	3.75	1.20	2.00	3.00
								917	918	919	912	912	913
								C	C	C	C	C	C
								08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
								n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units										
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	25	49	80	91	32				
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	25	49	80	160	32				
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs													
Naphthalene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.8	0.1	< 0.1	1.0	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	1.1	0.3	< 0.1	1.4	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	1.0	0.2	< 0.1	1.4	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.6	0.1	< 0.1	0.8	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.5	0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	0.6	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	0.6	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.6	< 0.1	< 0.1	0.7	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	0.5	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	6.7	< 1.6	< 1.6	8.9	3.3	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols													
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



Summary of Chemical Analysis Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225808	2225809	2225810	2225811	2225812	2225813
Sample ID	M6	M7	M7	M7	M8	M8
Depth	3.70	1.20	2.00	2.60	1.20	2.00
Other ID	914	894	895	895	922	922
Sample Type	C	C	C	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						
Preparation									
Stones >10mm	DETSC 1003*	1	% m/m	7.0	21	28	23	3.0	24
Moisture Content	DETSC 1004	0.1	%	15	7.4	7.1	8.1	13	16
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	5.4	4.8	2.2	3.8	5.8	9.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	< 0.2	< 0.2	< 0.2	0.7	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	< 0.1	0.1	0.1	0.5	0.4
Chromium	DETSC 2301#	0.15	mg/kg	18	6.9	4.2	11	10	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	9.3	9.0	15	38	31
Lead	DETSC 2301#	0.3	mg/kg	15	13	3.7	9.0	52	130
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.1	0.9	0.5	< 0.4	1.8	4.5
Nickel	DETSC 2301#	1	mg/kg	24	8.0	15	14	12	21
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	64	20	19	26	94	86
Inorganics									
pH	DETSC 2008#		pH	5.7	8.2	5.8	5.1	7.7	6.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	0.4
Organic matter	DETSC 2002#	0.1	%	4.2	1.7	1.8	1.2	4.3	4.0
Sulphide	DETSC 2024*	10	mg/kg	24	32	12	140	< 10	12
Sulphur (free)	DETSC 3049#	0.75	mg/kg	7.9	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.06	0.07	0.11	0.12	0.09	0.09
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	4.7	< 1.5	4.9	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	89	< 3.4	51	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	35	< 3.4	21	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	130	< 10	77	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	1.1	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	4.7	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	9.8	< 0.6	2.4	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	140	< 1.4	120	< 1.4
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	86	< 1.4	86	< 1.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 8 of 15



Summary of Chemical Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225808	2225809	2225810	2225811	2225812	2225813
Sample ID	M6	M7	M7	M7	M8	M8
Depth	3.70	1.20	2.00	2.60	1.20	2.00
Other ID	914	894	895	895	922	922
Sample Type	C	C	C	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023	08/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	240	< 10	210	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	370	< 10	280	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.4	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 9 of 15



Summary of Asbestos Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2225790	M1 898 1.20	SOIL	NAD	none	Vicky Convery
2225791	M1 898 2.00	SOIL	NAD	none	Vicky Convery
2225792	M1 899 2.60	SOIL	NAD	none	Vicky Convery
2225793	M2 902 1.20	SOIL	Amosite Chrysotile	Amosite and Chrysotile present in microscopic board debris	Vicky Convery
2225794	M2 902 2.00	SOIL	Amosite Chrysotile	Amosite and Chrysotile present as fibre bundles	Vicky Convery
2225795	M2 903 3.00	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225796	M3 905 1.20	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225797	M3 906 2.00	SOIL	NAD	none	Vicky Convery
2225798	M4 909 1.20	SOIL	NAD	none	Vicky Convery
2225799	M4 909 2.00	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225800	M4 910 2.70	SOIL	NAD	none	Vicky Convery
2225801	M5 917 1.20	SOIL	Amosite Chrysotile	Amosite and Chrysotile present in visible and microscopic board fragments	Vicky Convery
2225802	M5 917 2.00	SOIL	Chrysotile Amosite	Chrysotile and Amosite present in microscopic board fragment	Vicky Convery
2225803	M5 918 3.00	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225804	M5 919 3.75	SOIL	NAD	none	Vicky Convery
2225805	M6 912 1.20	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225806	M6 912 2.00	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery
2225807	M6 913 3.00	SOIL	NAD	none	Vicky Convery
2225808	M6 914 3.70	SOIL	NAD	none	Vicky Convery
2225809	M7 894 1.20	SOIL	NAD	none	Vicky Convery
2225810	M7 895 2.00	SOIL	NAD	none	Vicky Convery
2225811	M7 895 2.60	SOIL	NAD	none	Vicky Convery
2225812	M8 922 1.20	SOIL	NAD	none	Vicky Convery
2225813	M8 922 2.00	SOIL	NAD	none	Vicky Convery

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.



Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225793	2225794	2225795	2225796
Sample ID	M2	M2	M2	M3
Depth	1.20	2.00	3.00	1.20
Other ID	902	902	903	905
Sample Type	C	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023	08/08/2023
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.011	0.003	0.007
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.001	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.011	0.003	0.007
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	731.63	822.25	657.38	922.86
ACMs present*		type	Board			
Mass of ACM in sample		g	0.01			
% ACM by mass		%	0.00			
% asbestos in ACM		%	40			
% asbestos in sample		%	0.001			
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	0.001	na	na
% Chrysotile bundles in sample		Mass %	na	0.009	0.003	0.007
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample



Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225799	2225801	2225802
Sample ID	M4	M5	M5
Depth	2.00	1.20	2.00
Other ID	909	917	917
Sample Type	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023
Sampling Time			

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.289		0.002
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.289		0.002
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	na		na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na		na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na		na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	646.63	710.81		552.83
ACMs present*		type		Board	Cement	Board
Mass of ACM in sample		g		2.32	7.51	0.03
% ACM by mass		%		0.33	1.06	0.01
% asbestos in ACM		%		40	15	40
% asbestos in sample		%		0.131	0.158	0.002
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na		na
% Chrysotile bundles in sample		Mass %	<0.001	na		na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na		na
% Chrysotile fibres in sample		Mass %	na	na		na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na		na
Chrysotile fibres		Fibres/g	na	na		na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample



Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-20667-0-1

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225803	2225805	2225806
Sample ID	M5	M6	M6
Depth	3.00	1.20	2.00
Other ID	918	912	912
Sample Type	C	C	C
Sampling Date	08/08/2023	08/08/2023	08/08/2023
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	0.002	0.004
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.002	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	620.17	691.32	837.47
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	0.002	0.002	0.004
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample



Information in Support of the Analytical Results

Our Ref 23-20667-0-1

Client Ref 7782

Contract SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2225790	M1 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225791	M1 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225792	M1 2.60 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225793	M2 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225794	M2 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225795	M2 3.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225796	M3 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225797	M3 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225798	M4 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225799	M4 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225800	M4 2.70 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225801	M5 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225802	M5 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225803	M5 3.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225804	M5 3.75 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225805	M6 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225806	M6 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225807	M6 3.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225808	M6 3.70 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225809	M7 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225810	M7 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225811	M7 2.60 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225812	M8 1.20 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		
2225813	M8 2.00 SOIL	08/08/23	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report

4.13. Certification - Soil Sampling Investigation 08.08.2023



Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/07983
Issue Number: 1 **Date:** 23 August, 2023

Client: T J Booth Associates
20a East Gate Street
Rochdale
Rochdale
Greater Manchester
UK
OL16 1DH

Project Manager: Daniel Slattery
Project Name: Sladen Mill, Littleborough
Project Ref: Not specified
Order No: N/A
Date Samples Received: 09/08/23
Date Instructions Received: 14/08/23
Date Analysis Completed: 23/08/23

Approved by:

Richard Wong
Client Manager



Client Project Name: Sladen Mill, Littleborough

Lab Sample ID	23/07983/1	23/07983/2						Units	Limit of Detection	Method ref
Client Sample No	S1	S2								
Client Sample ID	WAC#1	WAC#2								
Depth to Top	0.20	0.20								
Depth To Bottom	0.40	0.40								
Date Sampled	08-Aug-23	08-Aug-23								
Sample Type	SOIL	SOIL								
Sample Matrix Code	6ABE	4AE								
% Stones >10mm _A	<0.1	<0.1						% w/w	0.1	A-T-244
pH _{MS}	9.25	7.97						pH	0.01	A-T-431a
Sulphate (acid soluble) _o ^{MS}	1500	840						mg/kg	200	A-T-428a
Cyanide (total) _A ^{MS}	<1	<1						mg/kg	1	A-T-042a/TC
Phenols - Total by HPLC _A	<0.2	<0.2						mg/kg	0.2	A-T-490a
Sulphide _A	38	22						mg/kg	5	A-T-043-a
Sulphur (elemental) _o ^{MS}	12	16						mg/kg	5	A-T-429a
Organic Matter _o ^{MS}	6.6	7.6						% w/w	0.1	A-T-432a
Arsenic _o ^{MS}	14	9						mg/kg	1	A-T-424a
Boron (water soluble) _o ^{MS}	<1.0	<1.0						mg/kg	1	A-T-427a
Cadmium _o ^{MS}	1.0	1.0						mg/kg	0.5	A-T-424a
Copper _o ^{MS}	40	45						mg/kg	1	A-T-424a
Chromium _o ^{MS}	23	23						mg/kg	1	A-T-424a
Chromium (hexavalent) _o	<1	<1						mg/kg	1	A-T-440a
Lead _o ^{MS}	62	58						mg/kg	1	A-T-424a
Mercury _o	0.91	0.43						mg/kg	0.17	A-T-424a
Nickel _o ^{MS}	21	24						mg/kg	1	A-T-424a
Selenium _o ^{MS}	<1	<1						mg/kg	1	A-T-424a
Zinc _o ^{MS}	106	117						mg/kg	5	A-T-424a



Envirolab Job Number: 23/07983

Client Project Name: Sladen Mill, Littleborough

Client Project Ref: Not specified

Lab Sample ID	23/07983/1	23/07983/2								
Client Sample No	S1	S2								
Client Sample ID	WAC#1	WAC#2								
Depth to Top	0.20	0.20								
Depth To Bottom	0.40	0.40								
Date Sampled	08-Aug-23	08-Aug-23								
Sample Type	SOIL	SOIL								
Sample Matrix Code	6ABE	4AE								
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^g	NAD	NAD								A-T-045
Asbestos Matrix (visual) ^o	-	-								A-T-045
Asbestos Matrix (microscope) ^o	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ^o	N/A	N/A								A-T-045



Envirolab Job Number: 23/07983

Client Project Name: Sladen Mill, Littleborough

Client Project Ref: Not specified

Lab Sample ID	23/07983/1	23/07983/2						Units	Limit of Detection	Method ref
Client Sample No	S1	S2								
Client Sample ID	WAC#1	WAC#2								
Depth to Top	0.20	0.20								
Depth To Bottom	0.40	0.40								
Date Sampled	08-Aug-23	08-Aug-23								
Sample Type	SOIL	SOIL								
Sample Matrix Code	6ABE	4AE								
PAH-16MS										
Acenaphthene _A ^{MS}	0.16	0.06						mg/kg	0.01	A-T-019a
Acenaphthylene _A ^{MS}	0.08	0.02						mg/kg	0.01	A-T-019a
Anthracene _A ^{MS}	0.25	0.16						mg/kg	0.02	A-T-019a
Benzo(a)anthracene _A ^{MS}	0.99	0.71						mg/kg	0.04	A-T-019a
Benzo(a)pyrene _A ^{MS}	0.90	0.73						mg/kg	0.04	A-T-019a
Benzo(b)fluoranthene _A ^{MS}	1.06	0.88						mg/kg	0.05	A-T-019a
Benzo(ghi)perylene _A ^{MS}	0.48	0.48						mg/kg	0.05	A-T-019a
Benzo(k)fluoranthene _A ^{MS}	0.40	0.32						mg/kg	0.07	A-T-019a
Chrysene _A ^{MS}	1.00	0.79						mg/kg	0.06	A-T-019a
Dibenzo(ah)anthracene _A	0.14	0.12						mg/kg	0.04	A-T-019a
Fluoranthene _A ^{MS}	1.84	1.38						mg/kg	0.08	A-T-019a
Fluorene _A ^{MS}	0.11	0.05						mg/kg	0.01	A-T-019a
Indeno(123-cd)pyrene _A ^{MS}	0.63	0.57						mg/kg	0.03	A-T-019a
Naphthalene _A ^{MS}	0.19	0.04						mg/kg	0.03	A-T-019a
Phenanthrene _A ^{MS}	0.97	0.61						mg/kg	0.03	A-T-019a
Pyrene _A ^{MS}	1.84	1.25						mg/kg	0.07	A-T-019a
Total PAH-16MS _A	11	8.17						mg/kg	0.01	A-T-019a



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 **six 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 "H"	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 "A"	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°C / 11550µS/cm @ 20°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

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envirolab.co.uk

Client: T J Booth Associates, 20a East Gate Street, Rochdale, Rochdale, Greater Manchester, UK, OL16 1DH

Project No: 23/07983
Date Received: 14/08/2023 (am)

Project: Sladen Mill, Littleborough

Cool Box Temperatures (°C): 18.8

Clients Project No:

Lab Sample ID	23/07983/1	23/07983/2
Client Sample No	S1	S2
Client Sample ID/Depth	WAC#1 0.20-0.40m	WAC#2 0.20-0.40m
Date Sampled	08/08/23	08/08/23
Deviation Code		
F	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/07983/1	23/07983/2
Client Sample No	S1	S2
Client Sample ID/Depth	WAC#1 0.20-0.40m	WAC#2 0.20-0.40m
Date Sampled	08/08/23	08/08/23
Sulphide	✓	✓

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 $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Page 6 of 7



Envirolab Analysis Dates

Lab Sample ID	23/07983/1	23/07983/2
Client Sample No	S1	S2
Client Sample ID/Depth	WAC#1 0.20-0.40m	WAC#2 0.20-0.40m
Date Sampled	08/08/23	08/08/23
A-T-004s	18/08/2023	18/08/2023
A-T-007s	21/08/2023	21/08/2023
A-T-019s	23/08/2023	23/08/2023
A-T-022s	18/08/2023	18/08/2023
A-T-024s	22/08/2023	22/08/2023
A-T-025w	23/08/2023	23/08/2023
A-T-026w	23/08/2023	23/08/2023
A-T-026w (F)	23/08/2023	23/08/2023
A-T-027s	22/08/2023	22/08/2023
A-T-028s	22/08/2023	22/08/2023
A-T-029s	21/08/2023	21/08/2023
A-T-031s	21/08/2023	21/08/2023
A-T-031w	23/08/2023	23/08/2023
A-T-032s	22/08/2023	22/08/2023
A-T-032w	23/08/2023	23/08/2023
A-T-037w	23/08/2023	23/08/2023
A-T-040s	21/08/2023	21/08/2023
A-T-042sTCN	18/08/2023	18/08/2023
A-T-043-s	21/08/2023	21/08/2023
A-T-044	18/08/2023	18/08/2023
A-T-045	18/08/2023	18/08/2023
A-T-050s	21/08/2023	21/08/2023
A-T-050w	23/08/2023	23/08/2023
Calc-no stones	23/08/2023	23/08/2023
Probe (w)	23/08/2023	23/08/2023

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

Page 7 of 7

4.14. Certification - Groundwater Sampling Investigation 22.08.2023 - 07.09.2023.



Certificate Number 23-20666

Issued: 15-Sep-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-20666

Client Reference 7782

Order No (not supplied)

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Description 6 Water samples.

Date Received 30-Aug-23

Date Started 30-Aug-23

Date Completed 15-Sep-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 5



Summary of Chemical Analysis

Water Samples

Our Ref 23-20666

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2225784	2225785	2225786	2225787	2225788	2225789
Sample ID	M2	M6	M3	M4	M8	M1
Depth	1.80	2.62	1.45	2.11	1.57	0.40
Other ID	551-553	560-561	556	559	547	548-550
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	22/08/2023	22/08/2023	22/08/2023	22/08/2023	22/08/2023	22/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.8	3.3	0.53	2.4	2.0	0.23
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.06	< 0.03	< 0.03	0.12	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.38	0.26	0.33	< 0.25	< 0.25
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007	< 0.007				< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.3	0.5	2.0	15	0.8	0.6
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.28	0.10	< 0.09	0.22	< 0.09	0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	6.7	4.5	1.1	11	1.6	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	11	0.88	1.0	2.7	0.44	0.69
Zinc, Dissolved	DETSC 2306	1.3	ug/l	50	25	20	16	5.1	7.8
Inorganics									
pH	DETSC 2008		pH	7.7	6.5				6.9
Cyanide, Total	DETSC 2130	0.04	mg/l	< 0.04	< 0.04				< 0.04
Dissolved Organic Carbon	DETSC 2085	2	mg/l	14	10				< 2.0
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	367	273	135	781	220	114
Sulphate as SO4	DETSC 2055	0.1	mg/l	91	140				25
Sulphur as S, Total	DETSC 2320*	10	mg/l	95	120				13
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	1.6	< 1.0				< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	260	< 1.0				< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	5.4	< 1.0				< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	24	< 1.0				< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	130	< 1.0				< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	95	< 1.0				< 1.0
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1				< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	2.2	< 1.0				< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	5.1	< 1.0				< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	23	< 1.0				< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	140	< 1.0				< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	84	< 1.0				< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	270	< 1.0				< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	530	< 1.0				< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0				< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0				< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0				< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0				< 1.0

Key: * -not accredited. n/s -not supplied.

Page 2 of 5



Summary of Chemical Analysis

Water Samples

Our Ref 23-20666

Client Ref 7782

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

				Lab No	2225784	2225785	2225786	2225787	2225788	2225789
				Sample ID	M2	M6	M3	M4	M8	M1
				Depth	1.80	2.62	1.45	2.11	1.57	0.40
				Other ID	551-553	560-561	556	559	547	548-550
				Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
				Sampling Date	22/08/2023	22/08/2023	22/08/2023	22/08/2023	22/08/2023	22/08/2023
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units							
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0					< 1.0
PAHs										
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05					< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01					< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.02	0.01					< 0.01
Fluorene	DETSC 3304	0.01	ug/l	0.01	0.01					< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.06	0.06					< 0.01
Anthracene	DETSC 3304	0.01	ug/l	0.01	0.01					< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.08	0.08					< 0.01
Pyrene	DETSC 3304	0.01	ug/l	0.06	0.06					< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.02	0.02					< 0.01
Chrysene	DETSC 3304	0.01	ug/l	0.04	0.04					< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.04	0.04					< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.01	0.01					< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.03	0.03					< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.02	0.02					< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01					< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02	0.02					< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.41	0.40					< 0.20
Phenols										
Phenol - Monohydric	DETSC 2130	0.1	mg/l	< 0.1	< 0.1					< 0.1

Key: * -not accredited. n/s -not supplied.

Page 3 of 5



Information in Support of the Analytical Results

Our Ref 23-20666

Client Ref 7782

Contract SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2225784	M2 1.80 WATER	22/08/23	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Hardness (7 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
2225785	M6 2.62 WATER	22/08/23	GB 1L, GV	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Hardness (7 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
2225786	M3 1.45 WATER	22/08/23	GV	Hardness (7 days)	
2225787	M4 2.11 WATER	22/08/23	GV	Hardness (7 days)	
2225788	M8 1.57 WATER	22/08/23	GV	Hardness (7 days)	
2225789	M1 0.40 WATER	22/08/23	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Hardness (7 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report



Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Attention: David Ravenscroft-Jones

Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation:	12 September 2023
Customer:	Sub Surface Laboratories Ltd
Sample Delivery Group (SDG):	230907-56
Your Reference:	7782
Location:	SLADEN MILL, LITTLEBOROUGH
Report No:	703529
Order Number:	

We received 7 samples on Thursday September 07, 2023 and 7 of these samples were scheduled for analysis which was completed on Tuesday September 12, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Sonia McWhan
Operations Manager



ALS Laboratories (UK) Limited. Registered Office: Torrington Avenue, Coventry CV4 9GU. Registered in England and Wales No. 02391955.

Version: 3.6 Version Issued: 12/09/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230907-56
Client Ref.: 7782

Report Number: 703529

Superseded Report:

Location: SLADEN MILL, LITTLEBOROUGH

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28593551	FIELD BLANK			05/09/2023
28593552	M1		0.30	05/09/2023
28593553	M2		1.50	05/09/2023
28593554	M3		2.00	05/09/2023
28593555	M4			05/09/2023
28593556	M6			05/09/2023
28593557	M8			05/09/2023

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



CERTIFICATE OF ANALYSIS

Validated

 SDG: 230907-56
 Client Ref.: 7782

Report Number: 703529

Superseded Report:

Location: SLADEN MILL, LITTLEBOROUGH

Results Legend			28593551	28593552	28593553	28593554	28593555	28593556	28593557
X Test N No Determination Possible			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
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			FIELD BLANK	M1	M2	M3	M4	M6	M8
				0.30	1.50	2.00			
			Digitube for PFAS analysis.	Digitube for PFAS analysis.	Digitube for PFAS analysis.	Digitube for PFAS analysis.	Digitube for PFAS analysis.	Digitube for PFAS analysis.	Digitube for PFAS analysis.
			UNL	CW	CW	CW	CW	CW	CW
PFAS Liquids	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230907-56

Report Number: 703529

Superseded Report:

Client Ref.: 7782

Location: SLADEN MILL, LITTLEBOROUGH

[illegible]

10:56:28 12/09/2023

Validated

Superseded Report:

Location: SLADEN MILL, LITTLEBOROUGH

10:56:28 12/09/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230907-56
Client Ref.: 7782

Report Number: 703529

Superseded Report:

Location: SLADEN MILL, LITTLEBOROUGH

Table of Results - Appendix

Method No	Description
TM337	Analysis of PFAS

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230907-56
Client Ref.: 7782

Report Number: 703529

Superseded Report:

Location: SLADEN MILL, LITTLEBOROUGH

Test Completion Dates

Lab Sample No(s)	28593551	28593552	28593553	28593554	28593555	28593556	28593557
Customer Sample Ref.	FIELD BLANK	M1	M2	M3	M4	M6	M8
AGS Ref.							
Depth		0.30	1.50	2.00			
Type	Unspecified	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
PFAS Liquids	12-Sep-2023	12-Sep-2023	12-Sep-2023	12-Sep-2023	12-Sep-2023	12-Sep-2023	12-Sep-2023



CERTIFICATE OF ANALYSIS

SDG: 230907-56
Client Ref: 7782

Report Number: 703529
Location: SLADEN MILL, LITTLEBOROUGH

Superseded Report:
Location: SLADEN MILL, LITTLEBOROUGH

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) 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 one month 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 effect.

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.

General

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 and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

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

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
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.

4.15. Certification – Borehole & Soil Sampling Investigation 06.10.2023-13.10.2023



Certificate Number 23-24776

Issued: 27-Oct-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-24776

Client Reference 7782A

Order No (not supplied)

Contract Title SLADEN MILL

Description 12 Soil samples.

Date Received 19-Oct-23

Date Started 19-Oct-23

Date Completed 27-Oct-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 10



Summary of Chemical Analysis Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Test	Method	LOD	Units	Lab No					
				Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time
Asbestos Quantification	DETSC 1102	0.001	%	0.018		0.002			
Preparation									
Stones >10mm	DETSC 1003*	1	% m/m	19	27	16	32	26	2.0
Moisture Content	DETSC 1004	0.1	%	26	20	18	9.3	9.6	23
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	94	33	44	4.4	4.9	4.0
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.9	0.6	0.7	0.3	< 0.2	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4	0.5	< 0.1	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	25	16	21	8.1	9.9	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	150	210	98	9.1	52	36
Lead	DETSC 2301#	0.3	mg/kg	1100	150	190	18	45	20
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.13	0.11	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	13	5.6	5.9	2.1	1.2	< 0.4
Nickel	DETSC 2301#	1	mg/kg	79	39	46	12	15	32
Selenium	DETSC 2301#	0.5	mg/kg	2.4	0.9	0.8	0.6	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	77	130	170	41	69	70
Inorganics									
pH	DETSC 2008#		pH	7.7	8.0	7.9	8.1	8.6	7.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	6.0	3.2	3.4	0.2	1.1	0.8
Sulphide	DETSC 2024*	10	mg/kg	75	68	68	28	< 10	20
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.13	0.09	0.12	0.03	0.03	0.06
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	3.6	< 1.5	< 1.5	1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	16	< 1.2	< 1.2	3.4	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	43	< 1.5	< 1.5	9.8	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	240	< 3.4	< 3.4	79	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	17	< 3.4	< 3.4	36	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	320	< 10	< 10	130	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	1.5	2.3	< 0.9	< 0.9	10	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	5.0	8.9	< 0.5	< 0.5	7.0	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	7.2	33	< 0.6	< 0.6	8.3	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	41	130	< 1.4	< 1.4	130	< 1.4
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	7.5	31	< 1.4	< 1.4	68	< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	62	200	< 10	< 10	220	< 10

Key: * - not accredited. # - MCERTS (accreditation only applies if report carries the MCERTS logo). n/s - not supplied.

Page 2 of 10



Summary of Chemical Analysis

Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Lab No	2249915	2249916	2249917	2249918	2249919	2249920
	M9	M9	M10	M10	M11	M12
Sample ID						
Depth	1.20-2.00	2.00	1.20	1.80	0.30-1.30	1.20
Other ID	282	283	279	279	285	294
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	06/10/2023	06/10/2023	06/10/2023	06/10/2023	06/10/2023	06/10/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units			
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	62	530	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.9
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	0.2	0.1	1.8
Pyrene	DETSC 3301	0.1	mg/kg	0.1	0.1	1.6
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.8
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.7
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.8
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.5
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	9.9
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 3 of 10



Summary of Chemical Analysis

Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Test	Method	LOD	Units	Lab No	2249921	2249922	2249923	2249924	2249925	2249926
				Sample ID	M12	M12	M14	M14	M14	M14
				Depth	2.20	3.70	1.35	1.80	2.40	3.70
				Other ID	295	296	289	289	290	291
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date	06/10/2023	06/10/2023	06/10/2023	06/10/2023	06/10/2023	06/10/2023
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%			0.002	0.58	< 0.001		
Preparation										
Stones >10mm	DETSC 1003*	1	% m/m	1.0	32	22	24	11	1.0	
Moisture Content	DETSC 1004	0.1	%	18	13	24	13	16	20	
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	5.2	3.4	12	6.7	8.3	16	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.2	0.9	0.5	0.5	1.2	
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	0.7	0.1	0.3	0.4	
Chromium	DETSC 2301#	0.15	mg/kg	12	11	18	650	70	37	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	24	12	110	150	87	35	
Lead	DETSC 2301#	0.3	mg/kg	28	7.9	190	68	60	30	
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05	0.78	0.08	0.13	< 0.05	
Molybdenum	DETSC 2301#	0.4	mg/kg	1.1	< 0.4	2.3	17	6.4	3.3	
Nickel	DETSC 2301#	1	mg/kg	12	25	21	400	48	26	
Selenium	DETSC 2301#	0.5	mg/kg	0.6	0.6	0.8	0.8	0.6	1.0	
Zinc	DETSC 2301#	1	mg/kg	35	33	160	180	91	140	
Inorganics										
pH	DETSC 2008#		pH	6.1	6.6	8.1	8.0	8.7	6.7	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.5	0.2	0.1	0.5	
Organic matter	DETSC 2002#	0.1	%	3.2	0.4	4.0	2.1	1.6	6.2	
Sulphide	DETSC 2024*	10	mg/kg	44	16	28	20	24	200	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	10	< 0.75	< 0.75	< 0.75	< 0.75	3.4	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.06	0.09	0.13	0.09	0.31	
Petroleum Hydrocarbons										
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	4.3	< 1.5	< 1.5	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	48	< 3.4	< 3.4	
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	22	< 3.4	< 3.4	
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	74	< 10	< 10	
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	74	< 1.4	< 1.4	
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	42	< 1.4	< 1.4	
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	120	< 10	< 10	

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 4 of 10



Summary of Chemical Analysis Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Test	Method	LOD	Units	Lab No					
				Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	M12	2.20	295	SOIL	06/10/2023	n/s
Benzene	DETSC 3321#	0.01	mg/kg	M12	3.70	296	SOIL	06/10/2023	n/s
Ethylbenzene	DETSC 3321#	0.01	mg/kg	M14	1.35	289	SOIL	06/10/2023	n/s
Toluene	DETSC 3321#	0.01	mg/kg	M14	1.80	289	SOIL	06/10/2023	n/s
m+p Xylene	DETSC 3321#	0.01	mg/kg	M14	2.40	290	SOIL	06/10/2023	n/s
o Xylene	DETSC 3321#	0.01	mg/kg	M14	3.70	291	SOIL	06/10/2023	n/s
MTBE	DETSC 3321	0.01	mg/kg	M14			SOIL	06/10/2023	n/s
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg						
Acenaphthylene	DETSC 3301	0.1	mg/kg						
Acenaphthene	DETSC 3301	0.1	mg/kg						
Fluorene	DETSC 3301	0.1	mg/kg						
Phenanthrene	DETSC 3301	0.1	mg/kg						
Anthracene	DETSC 3301	0.1	mg/kg						
Fluoranthene	DETSC 3301	0.1	mg/kg						
Pyrene	DETSC 3301	0.1	mg/kg						
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg						
Chrysene	DETSC 3301	0.1	mg/kg						
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg						
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg						
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg						
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg						
PAH 16 Total	DETSC 3301	1.6	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Page 5 of 10



Summary of Asbestos Analysis

Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2249915	M9 282 1.20-2.00	SOIL	Chrysotile	Chrysotile present in microscopic cement debris & bundles	Keith Wilson
2249916	M9 283 2.00	SOIL	NAD	none	Keith Wilson
2249917	M10 279 1.20	SOIL	Amosite	Bundles of Amosite fibres	Keith Wilson
2249918	M10 279 1.80	SOIL	NAD	none	Keith Wilson
2249919	M11 285 0.30-1.30	SOIL	NAD	none	Keith Wilson
2249920	M12 294 1.20	SOIL	NAD	none	Keith Wilson
2249921	M12 295 2.20	SOIL	NAD	none	Keith Wilson
2249922	M12 296 3.70	SOIL	NAD	none	Keith Wilson
2249923	M14 289 1.35	SOIL	Chrysotile	Bundles of Chrysotile fibres	Keith Wilson
2249924	M14 289 1.80	SOIL	Chrysotile	Chrysotile present in visible & microscopic cement debris	Keith Wilson
2249925	M14 290 2.40	SOIL	Chrysotile	Bundles of Chrysotile fibres	Keith Wilson
2249926	M14 291 3.70	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.



Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

		Lab No	2249915	2249917	2249923	2249924
Sample ID		M9	M10	M14	M14	
Depth		1.20-2.00	1.20	1.35	1.80	
Other ID		282	279	289	289	
Sample Type						
Sampling Date		06/10/2023	06/10/2023	06/10/2023	06/10/2023	
Sampling Time						
Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.018	0.002	0.002	0.580
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.015	na	na	0.580
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.004	0.002	0.002	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	617.53	803.24	684.89	551.92
ACMs present*		type	Cement			Cement
Mass of ACM in sample		g	0.62			21.33
% ACM by mass		%	0.10			3.86
% asbestos in ACM		%	15			15
% asbestos in sample		%	0.015			0.580
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	0.002	na	na
% Chrysotile bundles in sample		Mass %	0.004	na	0.002	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample



Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 23-24776

Client Ref 7782A

Contract Title SLADEN MILL

Lab No	2249925
Sample ID	M14
Depth	2.40
Other ID	290
Sample Type	
Sampling Date	06/10/2023
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	467.24
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by
by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
denotes deviating sample



Information in Support of the Analytical Results

Our Ref 23-24776
 Client Ref 7782A
 Contract SLADEN MILL

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	inappropriate container for tests
2249915	M9 1.20-2.00 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249916	M9 2.00 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249917	M10 1.20 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249918	M10 1.80 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249919	M11 0.30-1.30 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249920	M12 1.20 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249921	M12 2.20 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249922	M12 3.70 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249923	M14 1.35 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249924	M14 1.80 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249925	M14 2.40 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
2249926	M14 3.70 SOIL	06/10/23	GJ 250ml, GJ 60ml, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report



Certificate of Analysis

Certificate Number 23-25441-0

Issued: 07-Dec-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-25441-0

Client Reference 7782A

Order No (not supplied)

Contract Title Sladen Mill, Halifax Road, Littleborough

Description 4 Soil samples.

Date Received 27-Oct-23

Date Started 27-Oct-23

Date Completed 07-Dec-23

Test Procedures Identified by prefix DETSn (details on request).

Notes This report supersedes 23-25441, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 7



Summary of Chemical Analysis Soil Samples

Our Ref 23-25441-0

Client Ref 7782A

Contract Title Sladen Mill, Halifax Road, Littleborough

Lab No	2254209	2254210	2254211	2254212
Sample ID	M13	M13	M13	M13
Depth	1.00	1.61	2.47	3.50
Other ID	854	854	853	852
Sample Type	C	C	C	C
Sampling Date	13/10/2023	13/10/2023	13/10/2023	13/10/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0.001	%		0.007	0.001	
Preparation							
Moisture Content	DETSC 1004	0.1	%	14	17	17	8.3
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	9.1	9.2	10	3.0
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.8	0.4	0.3	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.6	0.4	0.1
Chromium	DETSC 2301#	0.15	mg/kg	18	20	18	10
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	38	500	43	12
Lead	DETSC 2301#	0.3	mg/kg	100	110	120	11
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.14	0.12	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.8	2.9	1.8	< 0.4
Nickel	DETSC 2301#	1	mg/kg	25	25	25	16
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Zinc	DETSC 2301#	1	mg/kg	200	150	170	51
Inorganics							
pH	DETSC 2008#		pH	7.7	7.8	7.8	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.1	0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.4	2.6	2.1	0.2
Sulphide	DETSC 2024*	10	mg/kg	44	12	12	< 10
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.06	0.05	0.06	0.02
Petroleum Hydrocarbons							
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	6.2	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	29	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	43	< 1.4	< 1.4
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg	< 10	79	< 10	< 10
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg	< 10	79	< 10	< 10

Key: * - not accredited. # - MCERTS (accreditation only applies if report carries the MCERTS logo). n/s - not supplied.

Page 2 of 7



Summary of Chemical Analysis Soil Samples

Our Ref 23-25441-0

Client Ref 7782A

Contract Title Sladen Mill, Halifax Road, Littleborough

Lab No	2254209	2254210	2254211	2254212
Sample ID	M13	M13	M13	M13
Depth	1.00	1.61	2.47	3.50
Other ID	854	854	853	852
Sample Type	C	C	C	C
Sampling Date	13/10/2023	13/10/2023	13/10/2023	13/10/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	8.3	0.6	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	3.4	0.8	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.2	18	3.8	0.2
Fluorene	DETSC 3301	0.1	mg/kg	0.2	23	3.6	0.2
Phenanthrene	DETSC 3301	0.1	mg/kg	1.0	120	19	1.0
Anthracene	DETSC 3301	0.1	mg/kg	0.3	30	4.7	0.3
Fluoranthene	DETSC 3301	0.1	mg/kg	2.1	140	20	1.6
Pyrene	DETSC 3301	0.1	mg/kg	2.2	130	18	1.7
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.0	63	8.3	0.8
Chrysene	DETSC 3301	0.1	mg/kg	1.1	67	8.7	0.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.6	42	6.8	0.5
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	25	4.0	0.3
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.1	53	7.4	0.8
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	1.2	33	5.0	0.9
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	5.7	0.7	0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.7	29	3.8	0.5
PAH 16 Total	DETSC 3301	1.6	mg/kg	12	790	110	9.6
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3



Summary of Asbestos Analysis Soil Samples

Our Ref 23-25441-0

Client Ref 7782A

Contract Title Sladen Mill, Halifax Road, Littleborough

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2254209	M13 854 1.00	SOIL	NAD	none	Vicky Convery
2254210	M13 854 1.61	SOIL	Amosite Chrysotile	Amosite and Chrysotile present as fibre bundles	Vicky Convery
2254211	M13 853 2.47	SOIL	Amosite	Amosite present as fibre bundles	Vicky Convery
2254212	M13 852 3.50	SOIL	NAD	none	Vicky Convery

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.



Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-25441-0

Client Ref 7782A

Contract Title Sladen Mill, Halifax Road, Littleborough

Lab No	2254210	2254211
Sample ID	M13	M13
Depth	1.61	2.47
Other ID	854	853
Sample Type	C	C
Sampling Date	13/10/2023	13/10/2023
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.007	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.007	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	557.33	470.66
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.005	0.001
% Chrysotile bundles in sample		Mass %	0.002	na

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample



Information in Support of the Analytical Results

Our Ref 23-25441-0

Client Ref 7782A

Contract Sladen Mill, Halifax Road, Littleborough

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2254209	M13 1.00 SOIL	13/10/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2254210	M13 1.61 SOIL	13/10/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2254211	M13 2.47 SOIL	13/10/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2254212	M13 3.50 SOIL	13/10/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report

4.16. Certification - Groundwater Sampling Investigation 19.10.2023 – 20.10.2023



Certificate Number 23-24926

Issued: 02-Nov-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-24926

Client Reference 7782A

Order No (not supplied)

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Description 3 Water samples.

Date Received 20-Oct-23

Date Started 20-Oct-23

Date Completed 02-Nov-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 5



Summary of Chemical Analysis

Water Samples

Our Ref 23-24926

Client Ref 7782A

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2250808	2250809	2250810
Sample ID	M9	M10	M14
Depth	1.71	0.65	2.82
Other ID			
Sample Type	WATER	WATER	WATER
Sampling Date	19/10/2023	19/10/2023	19/10/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	6.4	1.5	1.5
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.09	0.03	0.05
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.37	1.7
Chromium, Hexavalent	DETSC 2203	0.007	mg/l		< 0.007	
Copper, Dissolved	DETSC 2306	0.4	ug/l	5.6	1.7	12
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.59	0.15	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	9.1	1.7	39
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.9	0.59	18
Zinc, Dissolved	DETSC 2306	1.3	ug/l	33	6.2	1.6
Inorganics						
pH	DETSC 2008		pH		7.0	
Cyanide, Total	DETSC 2130	0.04	mg/l		< 0.04	
Dissolved Organic Carbon	DETSC 2085	2	mg/l		2.4	
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l		315	
Sulphate as SO4	DETSC 2055	0.1	mg/l		56	
Sulphur as S, Total	DETSC 2320*	10	mg/l		23	
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l		< 0.1	
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l		< 0.1	
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l		< 0.1	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l		< 0.1	
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l		< 0.1	
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l		< 0.1	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l		< 1.0	
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l		< 1.0	
Benzene	DETSC 3322	1	ug/l		< 1.0	
Toluene	DETSC 3322	1	ug/l		< 1.0	
Ethylbenzene	DETSC 3322	1	ug/l		< 1.0	
Xylene	DETSC 3322	1	ug/l		< 1.0	

Key: * -not accredited. n/s -not supplied.

Page 2 of 5



Summary of Chemical Analysis

Water Samples

Our Ref 23-24926

Client Ref 7782A

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2250808	2250809	2250810
Sample ID	M9	M10	M14
Depth	1.71	0.65	2.82
Other ID			
Sample Type	WATER	WATER	WATER
Sampling Date	19/10/2023	19/10/2023	19/10/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units		
MTBE	DETSC 3322	1	ug/l		< 1.0
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l		< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l		< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l		< 0.01
Fluorene	DETSC 3304	0.01	ug/l		< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l		< 0.01
Anthracene	DETSC 3304	0.01	ug/l		< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l		< 0.01
Pyrene	DETSC 3304	0.01	ug/l		< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l		< 0.01
Chrysene	DETSC 3304	0.01	ug/l		< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		< 0.01
PAH Total	DETSC 3304	0.2	ug/l		< 0.20
Phenols					
Phenol - Monohydric	DETSC 2130	0.1	mg/l		< 0.1

Key: * -not accredited. n/s -not supplied.

Page 3 of 5



Information in Support of the Analytical Results

Our Ref 23-24926

Client Ref 7782A

Contract SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2250808	M9 1.71 WATER	19/10/23	GV		
2250809	M10 0.65 WATER	19/10/23	GB 1L x2, GV		
2250810	M14 2.82 WATER	19/10/23	GV		

Key: G-Glass V-Vial B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report



Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Attention: Anna Marsden

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

CERTIFICATE OF ANALYSIS

Date of report Generation: 02 November 2023
Customer: Sub Surface Laboratories Ltd
Sample Delivery Group (SDG): 231020-53
Your Reference: 7782A
Location: Sladen Mill, Littleborough
Report No: 709601
Order Number:

We received 4 samples on Friday October 20, 2023 and 4 of these samples were scheduled for analysis which was completed on Thursday November 02, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Sonia McWhan
Operations Manager



ALS Laboratories (UK) Limited. Registered Office: Torrington Avenue, Coventry CV4 9GU. Registered in England and Wales No. 02391955.

Version: 3.6 Version Issued: 02/11/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 231020-53
Client Ref.: 7782A

Report Number: 709601

Superseded Report:

Location: Sladen Mill, Littleborough

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28815207	FIELD BLANK			18/10/2023
28815204	WSH9		1.71	18/10/2023
28815205	WSH10		0.65	18/10/2023
28815206	WSH14		2.82	18/10/2023

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

Validated

Location: Sladen Mill, Littleborough

28815206	WSH14	2.82	Digritube for PFAS analysis.	CW	X
28815205	WSH10	0.65	Digritube for PFAS analysis.	CW	X
28815204	WSH9	1.71	Digritube for PFAS analysis.	CW	X
28815207	FIELD BLANK		Digritube for PFAS analysis.	UNL	X

Validated

Client Ref.: 7782A

Location: Sladen Mill, Littleborough

08:53:13 02/11/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 231020-53
Client Ref.: 7782AReport Number: 709601
Location: Sladen Mill, Littleborough

Superseded Report:

Table of Results - Appendix

Method No	Description
TM337	Analysis of PFAS

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 231020-53
Client Ref.: 7782A

Report Number: 709601

Superseded Report:

Location: Sladen Mill, Littleborough

Test Completion Dates

Lab Sample No(s)	28815207	28815204	28815205	28815206
Customer Sample Ref.	FIELD BLANK	WSH9	WSH10	WSH14
AGS Ref.				
Depth		1.71	0.65	2.82
Type	Unspecified	Ground Water	Ground Water	Ground Water
PFAS Liquids	01-Nov-2023	02-Nov-2023	02-Nov-2023	02-Nov-2023



SDG: 231020-53
Client Ref: 7782A

Report Number: 709601
Location: Sladen Mill, Littleborough

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) 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.

General

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 ISO 17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

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

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

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
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.

4.17. Certification - Ground & Surface Water Sampling Investigation 07.11.2023-09.11.2023



Certificate Number 23-26479

Issued: 21-Nov-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-26479

Client Reference 7782A

Order No (not supplied)

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Description 12 Water samples.

Date Received 10-Nov-23

Date Started 10-Nov-23

Date Completed 21-Nov-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 7



Summary of Chemical Analysis

Water Samples

Our Ref 23-26479

Client Ref 7782A

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2260449	2260450	2260451	2260452	2260453	2260454
Sample ID	M1	M2	M3	M4	M6	M9
Depth	0.05	1.46	1.80	1.90	2.32	0.34
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.26	2.5	0.87	0.85	0.80	2.6
Boron, Dissolved	DETSC 2306*	12	ug/l						
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.03	< 0.03	0.07	0.04	0.06
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.41	< 0.25	0.62	0.54	0.40	0.29
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6	2.8	2.1	2.6	2.1	3.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	0.22	2.0	0.48	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.7	2.6	1.1	2.1	0.8	5.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.74	0.80	0.69	0.39	0.27	6.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	85	76	84	28	82	82
Inorganics									
pH	DETSC 2008		pH	7.5	7.4	7.5	7.6	6.9	7.0
Cyanide, Total	DETSC 2130	0.04	mg/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Dissolved Organic Carbon	DETSC 2085	2	mg/l	< 2.0	5.4	3.6	11	4.0	6.3
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	62.6	253	115	14.8	88.7	390
Sulphate as SO4	DETSC 2055	0.1	mg/l	39	120	20	6.9	11	200
Sulphur as S, Total	DETSC 2320*	10	mg/l	15	49	< 10	< 10	< 10	34
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	27	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	8.7	< 1.0	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	18	< 1.0	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	9.9	4.9	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	6.3	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	16	5.8	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	43	5.8	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Page 2 of 7



Summary of Chemical Analysis

Water Samples

Our Ref 23-26479

Client Ref 7782A

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

	Lab No	Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time	2260449	2260450	2260451	2260452	2260453	2260454
								M1	M2	M3	M4	M6	M9
								0.05	1.46	1.80	1.90	2.32	0.34
								WATER	WATER	WATER	WATER	WATER	WATER
								07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
								n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units										
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs													
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.07	< 0.01	0.03	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	0.06	< 0.01	0.04	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenols													
Phenol - Monohydric	DETSC 2130	0.1	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Page 3 of 7



Summary of Chemical Analysis

Water Samples

Our Ref 23-26479

Client Ref 7782A

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Lab No	2260455	2260456	2260457	2260458	2260459	2260460
Sample ID	M10	M14	WS4	WS5	WS6	WS7
Depth	0.59	2.30				
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.77	2.7	0.89	0.82	1.1	1.1
Boron, Dissolved	DETSC 2306*	12	ug/l		120				
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	0.08	0.07	0.06	0.06
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.97	12	1.1	0.44	0.54	0.51
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007		< 0.007	< 0.007	< 0.007	< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	4.4	3.3	3.2	3.0	2.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.18	1.9	1.8	3.1	3.0
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.8	3.5	2.3	1.9	2.1	1.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.63	19	0.31	0.36	0.30	0.28
Zinc, Dissolved	DETSC 2306	1.3	ug/l	76	1.9	26	23	100	93
Inorganics									
pH	DETSC 2008		pH	6.9		7.1	7.5	7.1	6.5
Cyanide, Total	DETSC 2130	0.04	mg/l	< 0.04		< 0.04	< 0.04	< 0.04	< 0.04
Dissolved Organic Carbon	DETSC 2085	2	mg/l	3.2		11	11	15	15
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	118		14.9	15.9	11.7	11.3
Sulphate as SO4	DETSC 2055	0.1	mg/l	37		7.1	7.3	5.5	5.3
Sulphur as S, Total	DETSC 2320*	10	mg/l	16		< 10	< 10	< 10	< 10
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	3.7	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	12	16	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	1.8	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	8.9	9.6	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	1.6	1.9	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1		< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0		< 1.0	12	16	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Page 4 of 7

Water Samples

Contract Title SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Page 5 of 7



Information in Support of the Analytical Results

Our Ref 23-26479

Client Ref 7782A

Contract SLADEN MILL, HALIFAX ROAD, LITTLEBOROUGH

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2260449	M1 0.05 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260450	M2 1.46 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260451	M3 1.80 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260452	M4 1.90 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260453	M6 2.32 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260454	M9 0.34 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260455	M10 0.59 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260456	M14 2.30 WATER	07/11/23	GV		
2260457	WS4 WATER	07/11/23	GB 1L, GV	pH/Cond (1 days)	
2260458	WS5 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260459	WS6 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2260460	WS7 WATER	07/11/23	GB 1L, GV, PB 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

End of Report



Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Attention: Anna Marsden

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

CERTIFICATE OF ANALYSIS

Date of report Generation:	24 November 2023
Customer:	Sub Surface Laboratories Ltd
Sample Delivery Group (SDG):	231109-61
Your Reference:	7782A
Location:	Sladen Mill, Littleborough
Report No:	712112
Order Number:	

We received 13 samples on Thursday November 09, 2023 and 13 of these samples were scheduled for analysis which was completed on Friday November 24, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Sonia McWhan
Operations Manager



ALS Laboratories (UK) Limited. Registered Office: Torrington Avenue, Coventry CV4 9GU. Registered in England and Wales No. 02391955.

Version: 3.6 Version Issued: 24/11/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61
Client Ref.: 7782A

Report Number: 712112

Superseded Report:

Location: Sladen Mill, Littleborough

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28914262	FIELD BLANK			07/11/2023
28914245	M1		0.05	07/11/2023
28914246	M2		1.46	07/11/2023
28914248	M3		1.80	07/11/2023
28914250	M4		1.90	07/11/2023
28914251	M6		2.32	07/11/2023
28914253	M9		0.34	07/11/2023
28914255	M10		0.59	07/11/2023
28914257	M14		2.30	07/11/2023
28914258	WS4			07/11/2023
28914259	WS5			07/11/2023
28914260	WS6			07/11/2023
28914261	WS7			07/11/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61
Client Ref.: 7782A

Report Number: 712112

Superseded Report:

Location: Sladen Mill, Littleborough

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

PFAS Liquids

All

NDPs: 0
Tests: 13

2891 4261	WS7			Digitube to PFAS analysis.	SW	X
2891 4260	WS6			Digitube to PFAS analysis.	SW	X
2891 4259	WS5			Digitube to PFAS analysis.	SW	X
2891 4258	WS4			Digitube to PFAS analysis.	SW	X
2891 4257	M14		2.30	Digitube to PFAS analysis.	GW	X
2891 4255	M10		0.59	Digitube to PFAS analysis.	GW	X
2891 4253	M9		0.34	Digitube to PFAS analysis.	GW	X
2891 4251	M6		2.32	Digitube to PFAS analysis.	GW	X
2891 4250	M4		1.90	Digitube to PFAS analysis.	GW	X
2891 4248	M3		1.80	Digitube to PFAS analysis.	GW	X
2891 4246	M2		1.46	Digitube to PFAS analysis.	GW	X
2891 4245	M1		0.05	Digitube to PFAS analysis.	GW	X
2891 4262	FIELD BLANK			Digitube to PFAS analysis.	UNL	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61

Report Number: 712112

Superseded Report:

Client Ref.: 7782A

Location: Sladen Mill, Littleborough

[illegible]

Validated

Superseded Report:

Location: Sladen Mill, Littleborough

08:55:36 24/11/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61

Report Number: 712112

Superseded Report:

Client Ref.: 7782A

Location: Sladen Mill, Littleborough

[illegible]

08:55:36 24/11/2023

Page 6 of 9



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61
Client Ref.: 7782A

Report Number: 712112

Superseded Report:

Location: Sladen Mill, Littleborough

Table of Results - Appendix

Method No	Description
TM337	Analysis of PFAS

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 231109-61
Client Ref.: 7782A

Report Number: 712112

Superseded Report:

Location: Sladen Mill, Littleborough

Test Completion Dates

Lab Sample No(s)	28914262	28914245	28914246	28914248	28914250	28914251	28914253	28914255	28914257	28914258
Customer Sample Ref.	FIELD BLANK	M1	M2	M3	M4	M6	M9	M10	M14	WS4
AGS Ref.										
Depth		0.05	1.46	1.80	1.90	2.32	0.34	0.59	2.30	
Type	Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water
PFAS Liquids	21-Nov-2023	21-Nov-2023	21-Nov-2023	21-Nov-2023	24-Nov-2023	21-Nov-2023	21-Nov-2023	21-Nov-2023	21-Nov-2023	21-Nov-2023

Lab Sample No(s)	28914259	28914260	28914261
Customer Sample Ref.	WS5	WS6	WS7
AGS Ref.			
Depth			
Type	Surface Water	Surface Water	Surface Water
PFAS Liquids	21-Nov-2023	21-Nov-2023	21-Nov-2023



CERTIFICATE OF ANALYSIS

SDG: 231109-61
Client Ref: 7782A

Report Number: 712112
Location: Sladen Mill, Littleborough

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) 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 effect.

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 (BTX). 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.

General

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 and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

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

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
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.

5. APPENDIX B: SITE INVESTIGATION PHOTOS.



Trial Hole 1.



Trial Hole 2.



Trial Hole 3.



Trial Hole 4.



Trial Hole 5.



Trial Hole 6.



Trial Hole 7.



Trial Hole 8.



Trial Hole 9.



Trial Hole 10.



Trial Hole 11



Trial Hole 12



Trial Hole 13



Trial Hole 15



Trial Hole 16



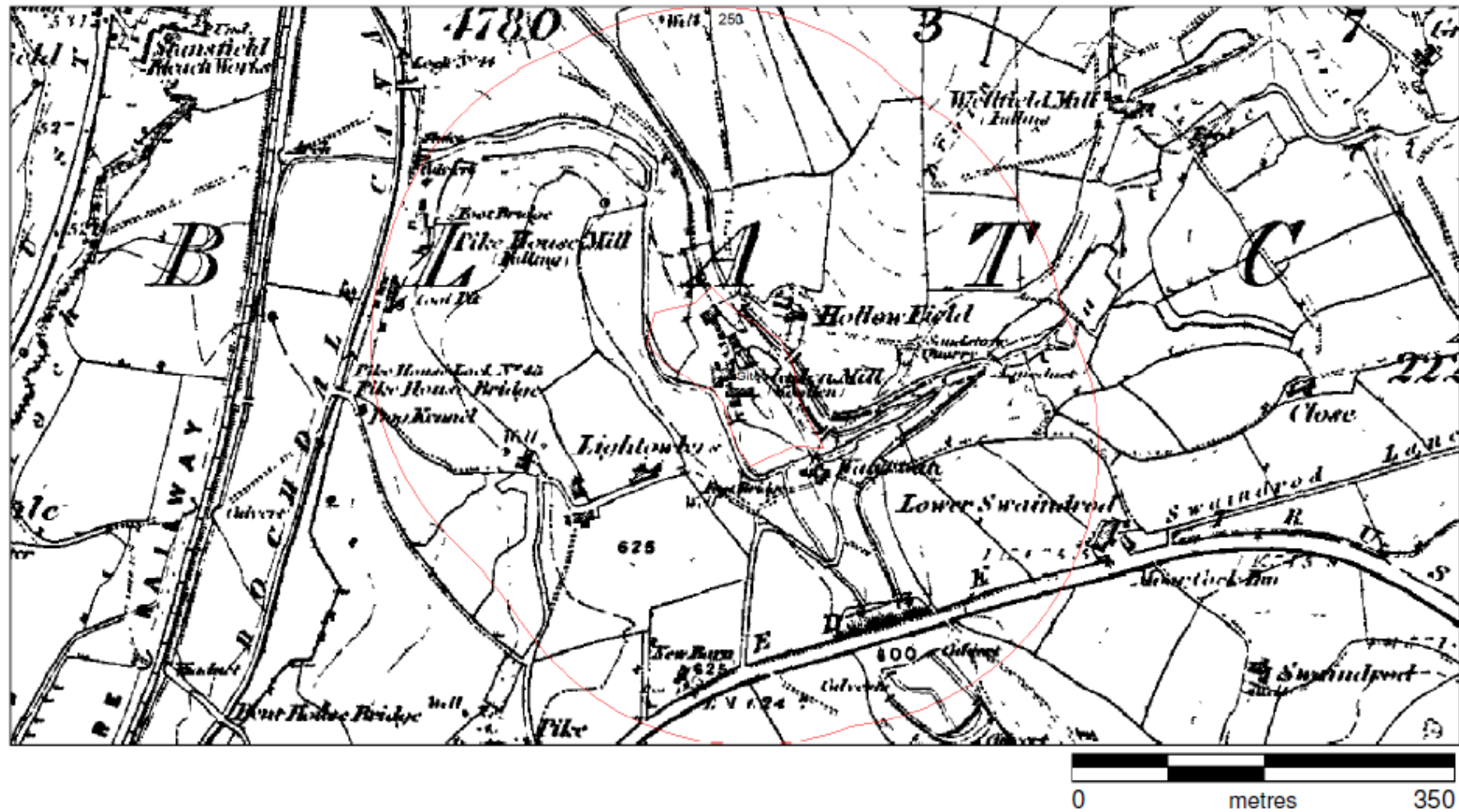
Trial Hole 17



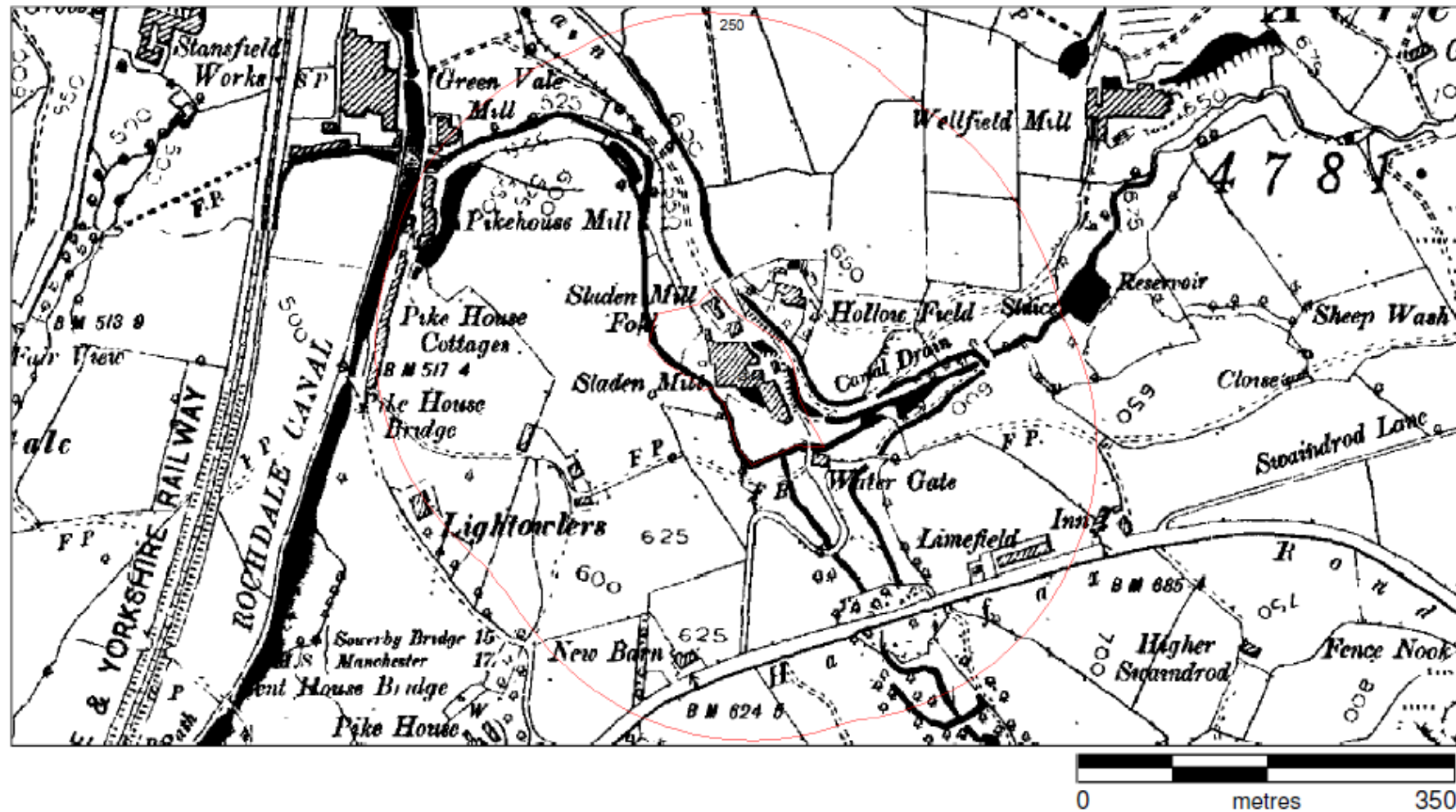
Trial Hole 18

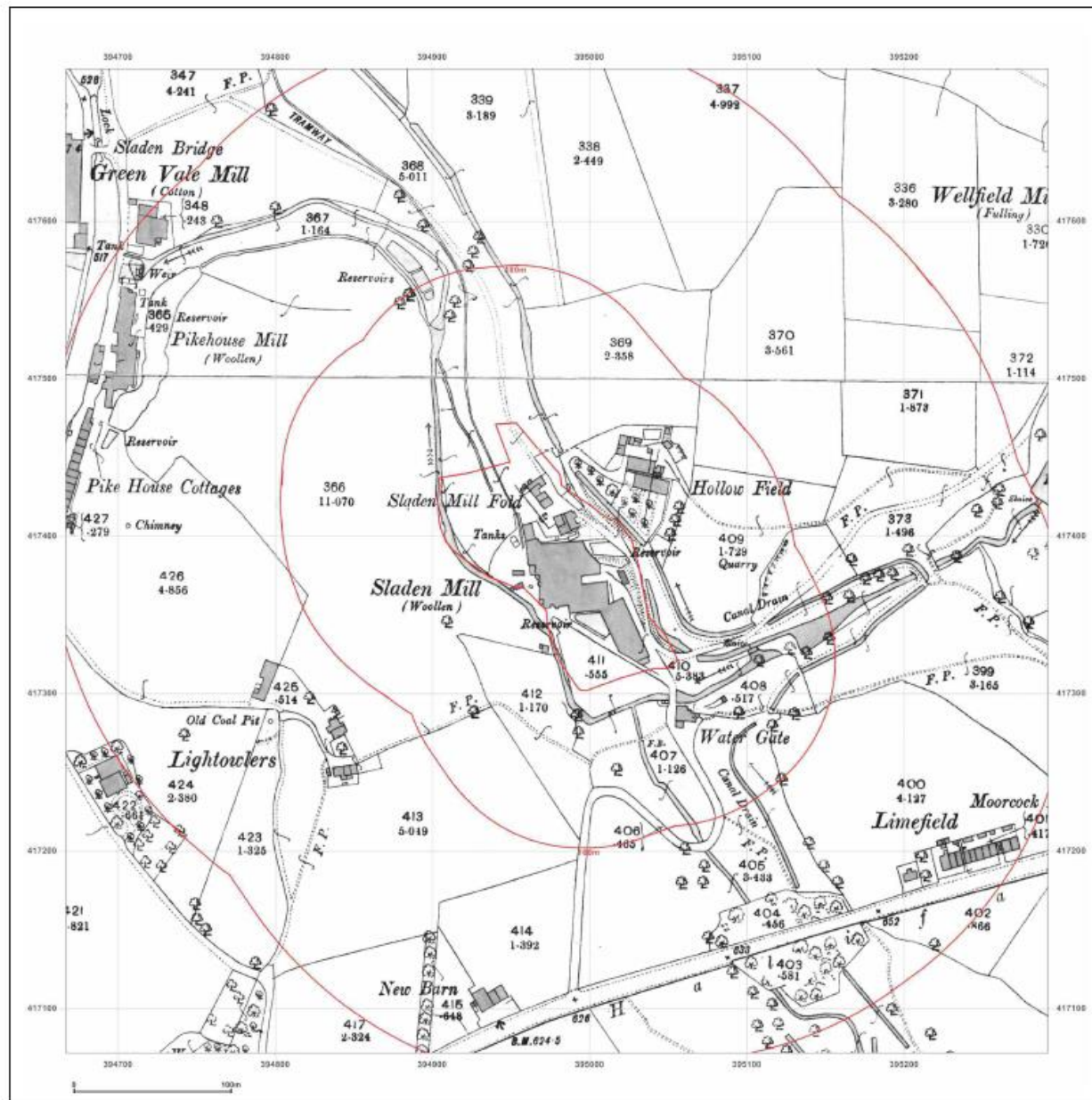
6. APPENDIX C: HISTORIC MAPS & SUPPORTING DOCUMENTATION.

5. Layer Name: 1848 map



6. Layer Name: 1854 map





emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: County Series

Map date: 1891

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A



Produced by
GroundSure Environmental Insight
www.groundsure.com

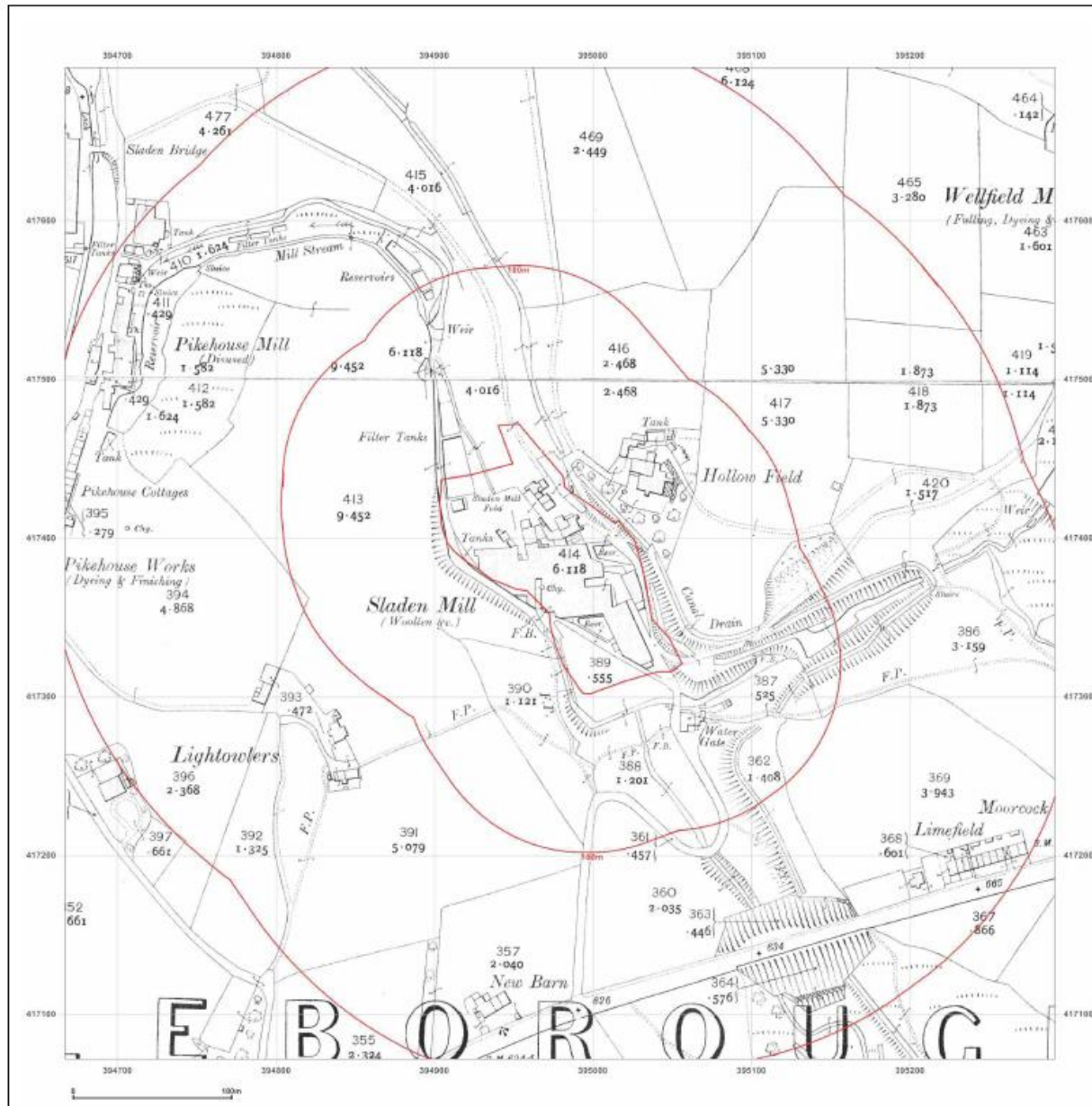
Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)





emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: County Series

Map date: 1910

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A



Produced by
GroundSure Environmental Insight
www.groundsure.com

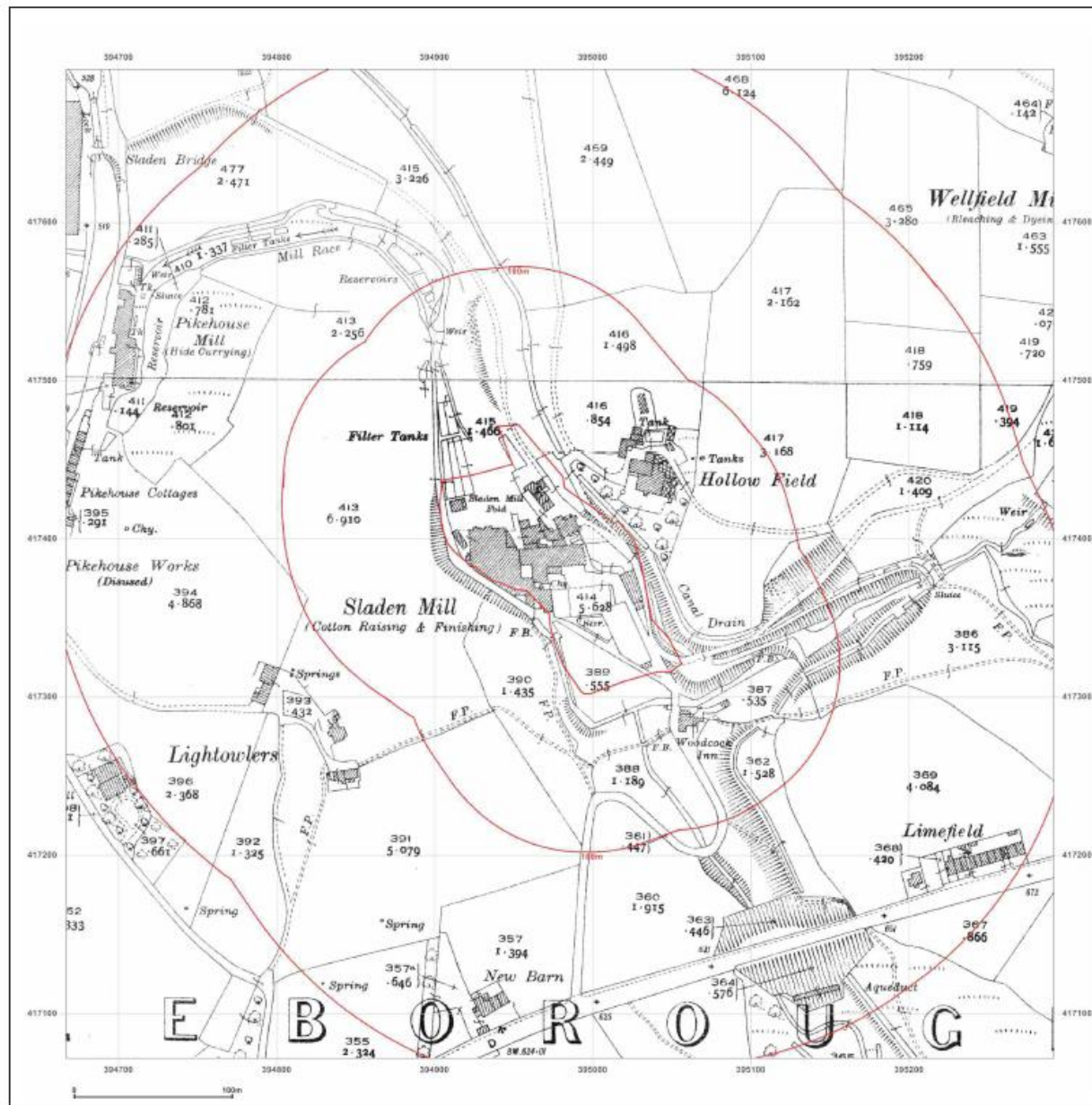


Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)



emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: County Series

Map date: 1928-1930

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1930
Revised 1930
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1928
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A



Produced by
GroundSure Environmental Insight
www.groundsure.com



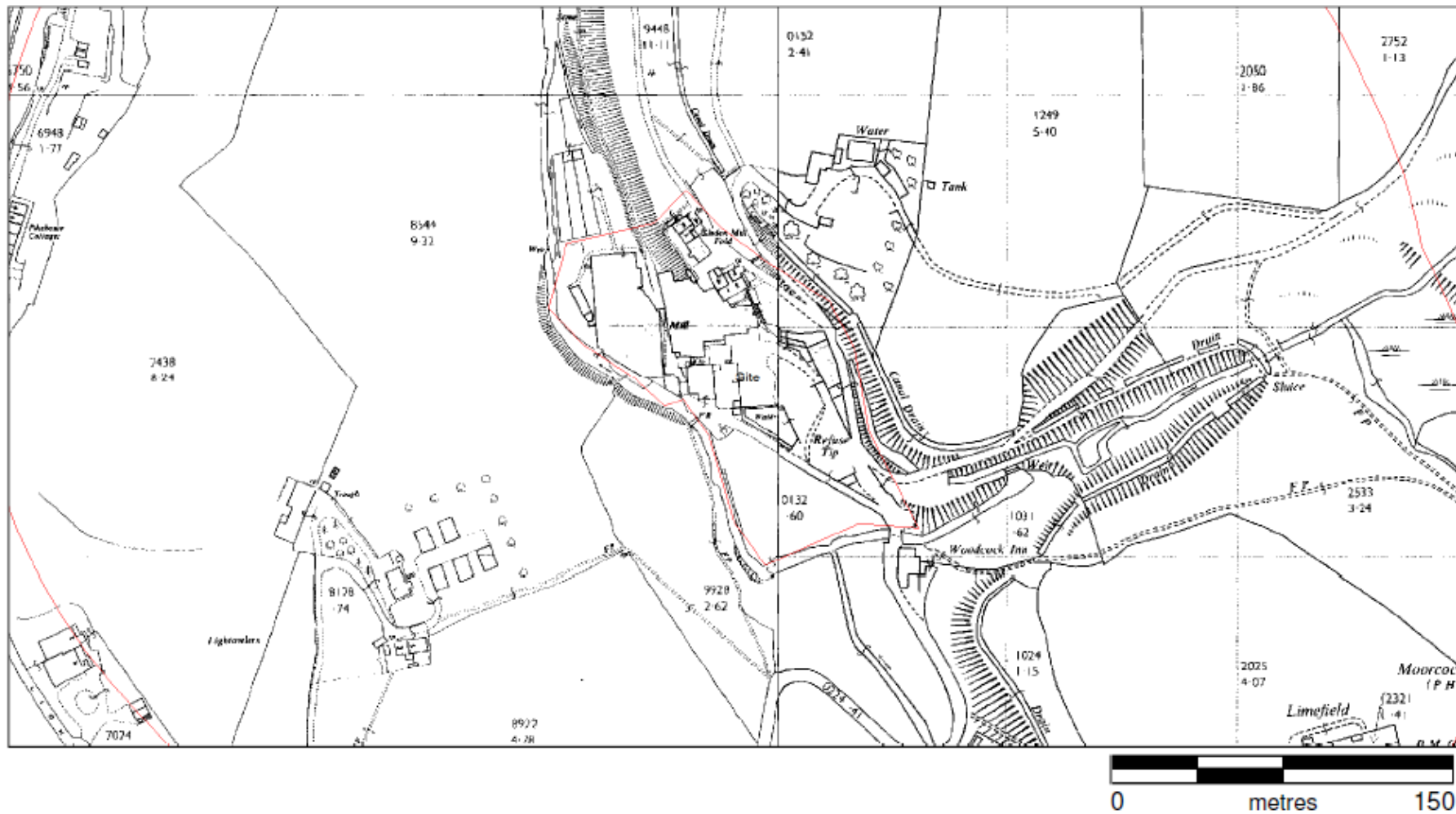
Supplied by:
www.emapsite.com
sales@emapsite.com

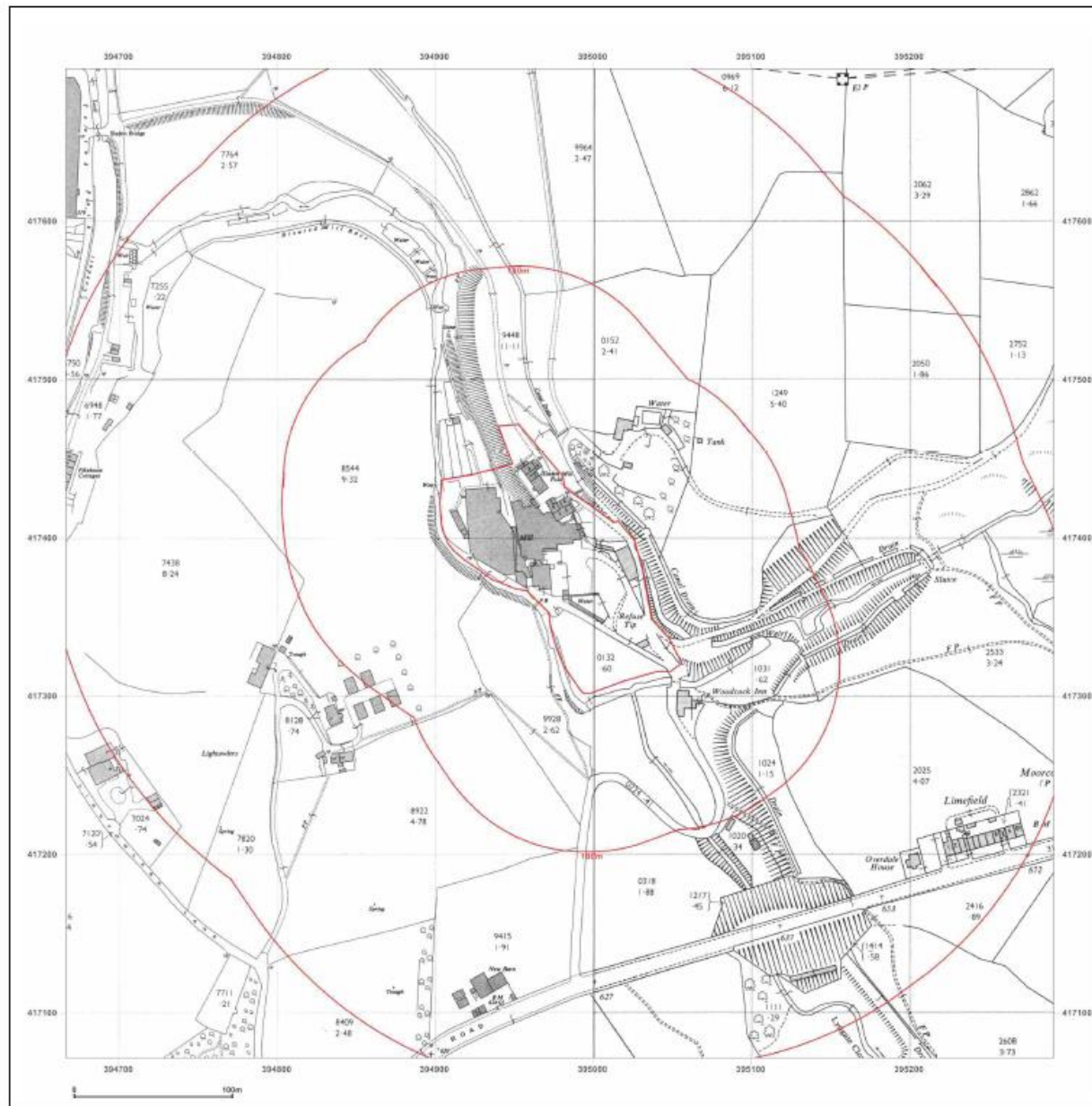
© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)

18. Layer Name: 1950's map





emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: National Grid

Map date: 1961

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1961
Revised 1961
Edition 1963
Copyright 1963
Levelled 1962



Produced by
GroundSure Environmental Insight
www.groundsure.com

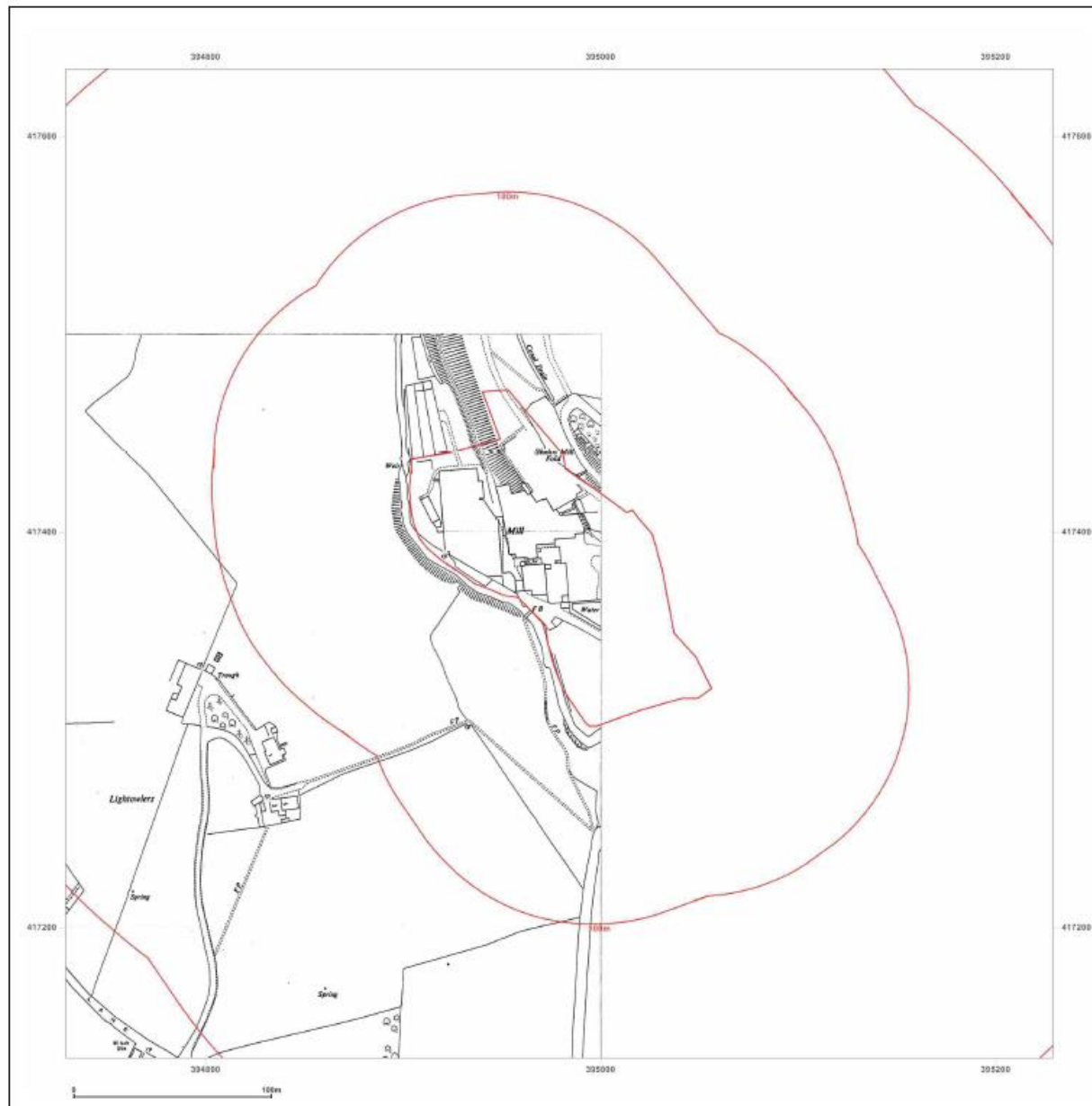


Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)



emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: National Grid

Map date: 1985

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1987
Revised 1985
Edition N/A
Copyright 1985
Levelled 1967



Produced by
GroundSure Environmental Insight
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)



emapsite™

Site Details:

Sladen Mill

Client Ref: EMS_290434_393098

Report Ref: EMS-290434_393098

Grid Ref: 394979, 417384

Map Name: National Grid

Map date: 1989-1992

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A



Produced by
GroundSure Environmental Insight
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown copyright and database rights 2015 Ordnance Survey 100035207

Production date: 26 February 2015

To view map legend click here [Legend](#)

- 6.1. February 2014, Building Notice, ref: 14/00179/DEM, 'Prior notification of proposed demolition of mill' & supporting documentation.



Town and Country Planning Act 1990 as amended by Section 13 Planning and Compensation Act 1991
The Town and Country Planning (General Permitted Development) Order 1995 (as amended)

PRIOR APPROVAL REQUIRED

Name and address for correspondence:	Applicant name:
C Smith And Sons (Rochdale Ltd) Mr Michael Smith Sladen Fold Farm Todmorden Road Littleborough OL15 0LP	C Smith And Sons (Rochdale Ltd)

Part 1 - Particulars of Application

Date of Application: 17 February 2014

Application No: 14/00179/DEM

Proposal:	Prior notification of proposed demolition of mill
Location:	Sladen Mill, Halifax Road, Littleborough, OL15 0LB,

Part II - Particulars of decision

The Rochdale Metropolitan Borough Council hereby give notice in pursuance of the provisions of the Town and Country Planning Act 1990 that prior approval **IS REQUIRED** for the development referred to in Part 1 hereof.

Date of Decision 5 March 2014



Signed on behalf of the Council



ROCHDALE
BOROUGH COUNCIL

Town and Country Planning Act 1990 as amended by Section 13 Planning and Compensation Act 1991
The Town and Country Planning (General Permitted Development) Order 1995 (as amended)

DETERMINATION ON PROPOSAL TO DEMOLISH

Name and address for correspondence:	Applicant name:
C Smith And Sons (Rochdale Ltd) Sladen Fold Farm Todmorden Road Littleborough OL15 0LP	C Smith And Sons (Rochdale Ltd)

Part 1 - Particulars of Application

Date of Application: 17 February 2014

Application No: 14/00179/DEM

Proposal: Prior notification of proposed demolition of mill
Location: Sladen Mill, Halifax Road, Littleborough, OL15 0LB,

Part II - Particulars of decision

The Rochdale Metropolitan Borough Council hereby give notice in pursuance of the provisions of the Town and Country Planning Act 1990 that permission has been **Granted** for the carrying out of the works relating to the demolition and subsequent restoration of the site referred to in Part 1 hereof in accordance with the application and plans submitted.

Reason for Decision:

Date of Decision 5 March 2014

Signed on behalf of the Council

IMPORTANT

PLEASE ENSURE THAT YOU HAVE READ AND FULLY UNDERSTOOD THE CONTENTS OF THIS DECISION NOTICE.

YOUR ATTENTION IS DRAWN TO THE ATTACHED NOTES.

Rochdale MBC
Economy & Environment
Building Control Services
Number One Riverside
Smith Street
Rochdale
OL16 1XU

Tel: 01706 924327
Email: building.control@rochdale.gov.uk



ROCHDALE
METROPOLITAN BOROUGH
COUNCIL



SECTION 80 – BUILDING ACT, 1984 NOTICE OF INTENDED DEMOLITION

I, the person whose signature, name and address appear below, HEREBY GIVE NOTICE of proposed works of demolition as follows:

Premises: SLADEN MILL, HALIFAX RD, LITTLEBOROUGH OL15 0NB
Description: PART DEMOLITION OF SITE.
Owner: ANDERBURGH,
Owner's Address: SLADEN MILL, HALIFAX RD, LITTLEBOROUGH, OL15 0NB

Does any part of the building contain asbestos containing materials? ☒ YES / ☐ NO

TYPE 3 ASBESTOS SURVEY DONE.
Please note that if the proposed building to be demolished does contain asbestos containing materials (ACMs), then the contractor must comply with the Control of Asbestos Regulations 2012 and an Asbestos Demolition Survey Report, completed in accordance with HSG 264, should be submitted to the HSE.

If an application has been submitted for Building Regulations or Planning or is pending please give details.

Description: _____
Application Number: _____

Is it a Listed Building? YES ☒ NO ☐ Is it in a Conservation Area? YES ☒ NO ☐

I CONFIRM THAT a Copy of This Notice Has Been Given to the Following, as Required by Law:

1. Electricity Supplier: SERVICES RELATED BY OUR CLIENT
2. Gas Supplier: _____
3. Occupiers of the properties adjacent to the building to be demolished:

Name: _____	Name: _____
Address: _____	Address: _____
_____	_____
Name: _____	Name: _____
Address: _____	Address: _____
_____	_____

I understand that I will receive in return a notice specifying certain steps that must be undertaken during the course of the demolition and that copies of that notice will have also been given to the HSE, adjacent occupiers and Gas and Electricity Connection Companies.

I also understand that I may not commence demolition work until I have received notice of the Council's requirement(s) under Section 81 or a period of not less than six weeks has expired from the date I give this Notice.

Start Date: ASAP (If known, but in accordance with the above paragraph)
(ONCE APPROVED)

Contract Duration (Approx): 12 WEEKS

Name and address of person or company undertaking the demolition: P. Smith & Sons (Rochdale) Ltd
Sladen Fold Farm
Summit, Littleborough
OL15 0LP

Name and address of Agent (if any): N/A

Signature: [Signature] Date: 7-1-2014
Name (print) PAUL DOUGLAS
Address Sladen Fold Farm
Summit, Littleborough
OL15 0LP 01706 378558.

Please return to the address below with the fee of £155.00 made payable to Rochdale MBC

Return to: Rochdale MBC, Economy & Environment, Building Control Services, Number One Riverside, Smith Street, Rochdale, OL16 1XU.

Revised June 13 dco

Registered Office

Sladen Fold Farm, Summit, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616
Email : csmithandsons@aol.com

C SMITH & SONS (ROCHDALE) Ltd

**Proposed Health and Safety Pack covering
Demolition Works
at
Sladen Mill, Halifax Road, Littleborough, Lancs, OL15 0LB**



on behalf of



Registered Office:

Sladen Fold Farm, Summit, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : csmithandsons@aol.com

C SMITH & SONS (ROCHDALE) Ltd**Outline Method Statement**

Reference Number :	MS/SM/001	Site Location:	Sladen Mill, Halifax Road, Littleborough, Lancs, OL15 0LB
Author(s):	Tony Hardman (07808 292636)		
Activity Under Consideration :	Demolition of Identified Dilapidated Structures		

Step	Description	Activities Required	Remarks
	Introduction and Site Safety	C Smith & Sons (Rochdale Ltd), hereinafter referred to as CSS, have been appointed by our Client (Alderburgh Limited) as the contractor responsible for demolition of a range of buildings and structures at the above site. We understand that since a fire (approx 20 years ago) the various structures have been lying unused and have gradually fallen into a state of dilapidation and disrepair. The structures are now to be demolished, removing the risk of potential collapse and allowing the created space to be used for site based storage/parking etc. This method statement sets out the proposed safe system of work which will be employed by ourselves during the initial clean up and subsequent demolition (down to slab level) of the identified structures. A Refurbishment and Demolition Asbestos Survey (ref S.J.01174, dated 21 December, 2013) has been prepared. The report identifies various asbestos containing materials which shall be removed by our trained and competent operatives prior to commencement of the demolition activities. The method statement assumes that any equipment required by the Client has been previously removed from all areas identified for demolition.	Our Demolition Manager for this project shall be Michael Smith (07831 462692) with day-to-day Supervision by Carl Jones (07970 900109). Carl shall take charge of the works and be responsible for the day-to-day management and co-ordination of all related Health and Safety matters within the workplace. He shall liaise with the Client Mr Peter Davidson, Tel 07976 720650, to determine any current or forthcoming site activities which may affect the safe completion of our work. Any minor and reasonable changes to the sequence or methodology of work shall be agreed on site and this method statement shall be hand amended to reflect the change. Where such changes are deemed to be significant a new method statement shall be produced.

MS/SM/001

Page 1 of 16

Issue 01 - 8 February, 2014

Registered Office:

Sladen Fold Farm, Summit, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : csmithandsons@aol.com

C SMITH & SONS (ROCHDALE) Ltd**Site Photo's**

Asbestos Cement Sheets to be removed prior to Boiler House Demolition

MS/SM/001

Page 14 of 16

Issue 01 - 8 February, 2014

Dunelm Environmental Consultancy (UK)

ASBESTOS SURVEY REPORT**SURVEY REFERENCE NO:** S.J.01174**CLIENT:** C Smith & Son**SITE ADDRESS:** Sladen Mill Littleborough**CONTACT:** Michael Smith**SURVEY TYPE:** Refurbishment/Demolition Survey**SURVEY DATE:** 21st December 2013**SURVEY LEADER:** Martin Dennett**SURVEYOR(S):** Martin Dennett**REPORT ISSUE DATE:** 21st December 2013**REPORT PREPARED BY:** M Dennett**REPORT REVIEWED BY:** M Dennett

THE LEAD SURVEYOR M. Dennett is the holder of a P402 Certificate: Buildings Surveys and Bulk Sampling for Asbestos (including Risk Assessment and Risk Management Strategies) Certificate in Asbestos Inspection procedures and Asbestos Inspector Assessment. & P406 Supervisory Management Certificate

Report No S.J.01174

Dunelm Environmental Consultancy (UK)

SECTION 1: EXECUTIVE SUMMARY

For further details please see section 7

Requires a competent contractor with trained staff under non Licensed Notifiable removal regulations to remove as follows:

Floor	Sample No.	Material Type	Asbestos Type	Comments	Photo
Boiler Room	Visual	Fuse Box Flash Pads	Chrysotile	Remove prior to Demolition	
Boiler room	Visual	Asbestos Cement wall panels	Chrysotile	Remove prior to Demolition	
Store	Visual	Asbestos Cement wall panels	Chrysotile	Remove prior to Demolition	
Stenyer room	Visual	Asbestos Cement Roof	Chrysotile	Remove prior to Demolition	No Photo

Report No S.J.01174

6.2. 2017 Building Notice, ref: DEM/17/0122, 'Demolition of Site Buildings' & supporting documentation.



ECONOMY SERVICE

John Searle
Director of Economy

BUILDING CONTROL SERVICE

Dave Oakes BSc (Hons) MSc C.Build.E MCABE FRACS
Building Control Manager
Number One Riverside
Smith Street
Rochdale
OL16 1XU

Colin Smith & Sons
Sladen Fold Farm
Summit
Littleborough
OL15 0LP

Fax: 01706 924628
Our ref: DEM/17/0122
Enquiries to: ADMIN
Direct Line: 01706 924327
Date: 8 November 2017

Dear Sirs

THE BUILDING ACT 1984 SECTION 81 + 82 :

REFERENCE: DEM/17/0122

NOTICE OF INTENDED DEMOLITION

Location: Alderburgh Ltd, Sladen Mill, Halifax Road, Littleborough, OL15 0LB,
Proposal: DEMOLITION OF EXISTING BUILDINGS

BUILDING ACT 1984: SECTION 81
NOTICE TO PERSONS UNDERTAKING DEMOLITION WORKS

To: Colin Smith & Sons, Sladen Fold Farm, Summit, Littleborough, OL15 0LP

Further to the receipt of the Section 80 Notice, dated 16th October 2017, which specifies certain works of demolition intended to be carried out in respect of the building(s) at the following address:

Sladen Mill, Halifax Road, Littleborough, OL15 0LB

Rochdale Borough Council (referred to as 'the Council' hereafter) pursuant to Sections 81 & 82 of the Building Act 1984, requires you to complete the work of demolition in accordance with the attached Schedule, no later than 8 weeks from the date of commencement.

NOTE 1: You have a right of appeal to a Magistrates' Court against this Notice and your attention is drawn to the notes attached hereto which set out the relevant statutory provisions regarding appeals against, and the enforcement of, this Notice. Any appeal must be made within 21 days from the date when this Notice is served upon you.

NOTE 2: The Contractor should contact Building Control on Telephone No 01706 924325 between the hours of 9.00am and 4.30pm to arrange any site meetings deemed necessary before any works of demolition.

NOTE 3: Your attention is drawn to the provisions contained in Sections 82, 83, 99, 102 and 103 of the Building Act 1984. Any appeal in pursuance of these provisions should be made to a Magistrates' Court and must be brought within 21 days of the service of this notice.

Signed: Mr David Oakes

Date: 8 November 2017

.cc HSE, Electricity North West, National Grid, United Utilities, Adjacent Owners.



Rochdale MBC
Economy & Environment
Building Control Services
Number One Riverside
Smith Street
Rochdale
OL16 1XU

Tel: 01706 924327

Email: building.control@rochdale.gov.uk



SECTION 80 – BUILDING ACT, 1984 NOTICE OF INTENDED DEMOLITION

I, the person whose signature, name and address appear below, HEREBY GIVE NOTICE of proposed works of demolition as follows:

Premises:

SLADEN MILL, BLACKSTONE EDGE ROAD, LITTLEBOROUGH

Description:

STONE, BRICK & SLATE & PORTAL FRAMED BUILDING

Owner:

ALDERBURY LTD / PAL S/PP PR DAVIDSON & B DAVIDSON

Owner's Address:

Does any part of the building contain asbestos containing materials? ☒ YES ☐ NO

See Survey

Please note that if the proposed building to be demolished **does** contain asbestos containing materials (ACMs), then the contractor must comply with the Control of Asbestos Regulations 2012 and an Asbestos Demolition Survey Report, completed in accordance with HSG 264, should be submitted to the HSE.

If an application has been submitted for Building Regulations or Planning or is pending please give details.

Description:

RESIDENTIAL DEVELOPMENT

Application Number:

15/01235 / OUT.

Is it a Listed Building?

YES ☒ NO

Is it in a Conservation Area?

YES ☒ NO

I CONFIRM THAT a Copy of This Notice Has Been Given to the Following, as Required by Law:

1. Electricity Supplier:

BY CLIENT

2. Gas Supplier:

BY CLIENT

3. Occupiers of the properties adjacent to the building to be demolished:

Name:

Name:

Address:

Address:

Name:

Name:

Address:

Address:

N/A

N/A

I understand that I will receive in return a notice specifying certain steps that must be undertaken during the course of the demolition and that copies of that notice will have also been given to the HSE, adjacent occupiers and Gas and Electricity Connection Companies.

I also understand that I may not commence demolition work until I have received notice of the Council's requirement(s) under Section 81 or a period of not less than six weeks has expired from the date I give this Notice.

Start Date: NOV 2017 (If known, but in accordance with the above paragraph)

Contract Duration (Approx) 6-8 WEEKS

Name and address of person or company undertaking the demolition: COLIN SMITH & SONS
SLADEN FOLD FARM
SUMMIT
LITTLEBOROUGH OL15 0LP

Name and address of Agent (if any):

Signature: [Signature] Date: 16 OCTOBER 2017
Name (print) MICHAEL SMITH
Address SLADEN FOLD FARM
LITTLEBOROUGH
OL15 0LP

Please return to the address below with the fee of £164.00 made payable to Rochdale MBC

Return to: Rochdale MBC, Economy & Environment, Building Control Services, Number One Riverside, Smith Street, Rochdale, OL16 1XU.

Revised March 2014 AT



Sladen Fold Farm, Lightowlers Lane, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : info@csmithandsons.co.uk

COLIN SMITH & SONS

Outline Method Statement

Reference Number :	MS/SM/002	Site Location:	Sladen Mill, Blackstone Edge Road, Littleborough, OL15 0LB
Author(s):	Tony Hardman (07808 292636)		
Activity Under Consideration :	Demolition of Site Buildings		

Step	Description	Activities Required	Remarks
	Introduction and Site Safety	Colin Smith & Sons, hereinafter referred to as CSS, have been appointed by our Client (PAL Trustees Ltd, PR Davidson & B Davidson) as the contractor responsible for the demolition of a number of buildings at the above site (see attached Site Plan). This method statement sets out the proposed safe system of work which will be employed by ourselves during the initial soft stripping and subsequent demolition (down to slab level) of the identified structures. A Refurbishment and Demolition Asbestos Survey (ref S.J.01410, issued 12 December, 2017) has been prepared. The report identifies various asbestos containing materials (Chrysotile cement sheets in Buildings 1, 2 and 3) which shall be removed by our trained and competent operatives prior to commencement of the remote demolition activities. The method statement assumes that any equipment required by the Client has been previously removed from the buildings identified for demolition.	Our Demolition Manager for this project shall be Michael Smith (07831 462692) with day-to-day Supervision by Carl Jones (07970 900109). Carl shall take charge of the works and be responsible for the day-to-day management and co-ordination of all related Health and Safety matters within the workplace. He shall liaise with the Client Mr Peter Davidson, Tel 07976 720650, to determine any current or forthcoming site activities which may affect the safe completion of our work. Any minor and reasonable changes to the sequence or methodology of work shall be agreed on site and this method statement shall be hand amended to reflect the change. Where such changes are deemed to be significant a new method statement shall be produced.

MS/SM/002

Page 1 of 13

Issue 01 - 2 May, 2018

Sladen Fold Farm, Lightowlers Lane, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : info@csmithandsons.co.uk

COLIN SMITH & SONS

Reference Number : MS/SM/002

Step	Description	Activities Required	Remarks
6.0	Removal of Asbestos Containing Materials (Cement Sheets)	With all areas now cleared of any debris identify the asbestos containing materials (and any others which may have appeared following completion of the clean up activities) and establish the access requirements to assist in their removal.	
7.0		Check ground conditions and position the MEWP adjacent to the cement sheets.	
8.0		Rig up gas cutting equipment, bolt croppers etc, climb into the MEWP basket, attach safety harness to installed anchor point and raise the basket to sit adjacent to the first sheet identified for removal.	Cement sheets are installed to the roof and sides of Buildings 1 and 2.
9.0		Using a combination of gas cutting equipment and/or bolt croppers carefully remove the sheet fixing bolts and lower the sheet into the MEWP basket.	
10.0		Remove the remaining cement sheets in that location then lower the basket, remove and wrap/bag the cement sheets and place aside ready for disposal.	Complete a final inspection/clean down of the floor/area.
11.0		Repeat above steps until all remaining cement sheets (and rainwater goods) have been removed then undress from PPE, bag this as asbestos waste and dispose of all asbestos waste via the approved disposal route.	As above. Place consignment notes in the site file.
12.0		With all asbestos containing materials removed, reposition the MEWP clear of the point of work and manoeuvre the demolition plant into position adjacent to the agreed start point.	

MS/SM/002

Page 4 of 13

Issue 01 - 2 May, 2018

Sladen Fold Farm, Lightowlers Lane, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : info@csmithandsons.co.uk

COLIN SMITH & SONS

Reference Number : MS/SM/002

Step	Description	Activities Required	Remarks
13.0	Demolition Works (Buildings 1, 2 and 3)	Extend the fencing as appropriate and set up dust suppression equipment (where weather/site conditions dictate).	All fencing is to be positioned to create a suitable Demolition Exclusion Zone. Position a Banksman adjacent to the point of work (a safe distance away from the operating machine).
14.0		Using the excavator with fitted shear cut out and remove the steel portal frame of Building 1.	Banksman is to ensure that no persons enter the area during demolition. If access is required all work must stop until the area has been vacated and it is safe to resume.
15.0		With the building demolished use gas cutting equipment to complete further size reduction of the portal frame steel structure (if required) and load to scrap bulker.	Use the gas cutting equipment to remove any tripping hazards (remaining steel columns flush to the floor slab).
16.0		Repeat above steps to demolish Buildings 2 and 3 down to slab level.	
17.0	Building 4	Where salvageable arrange removal of any roofing slates by specialist roofing contractor	Separate RAMS will refer.
18.0		Use a combination of excavator and Demolition Operatives working from a MEWP (when demolishing the elevation adjacent to the minor road) to reduce the building down to slab/wall level.	Banksman to be positioned along Blackstone Edge Road during demolition of the adjacent elevation.
19.0		Segregate all recovered materials into 'like' types.	
20.0		Load the recovered stone, scrap and timber into the appropriate waste skips and remove from site.	

MS/SM/002

Page 5 of 13

COLIN SMITH & SONS

Sladen Fold Farm, Lightowlers Lane, Littleborough, Lancashire, OL15 0LP
Tel : 01706 378558 / 07831 462692 - Fax : 01706 378616 - Email : info@csmithandsons.co.uk

HAZARD No.	EXISTING CONTROLS	EXISTING INFORMATION Can refer to existing documents	EXISTING TRAINING	BEST PRACTICE	EXISTING CONTROLS OK / Not OK
8 cont	Teamwork to be employed for heavier sections of debris. Dusty areas to be wetted down prior to sweeping up and removal of debris in that area with suitable RPE worn. Skips to be regularly removed leaving a clean and safe site. Open top skips to be covered prior to removal. Consignment notes to be obtained for each removed load.	As above	As above	As above	Okay
9	The site Refurbishment and Demolition Survey Report shows the presence of asbestos containing materials (ACM's) in the form of cement sheets. Particulate respirators (FFP3), disposable coveralls and gloves to be worn when removing and handling the sheets and any other non notifiable materials which may be discovered during the course of the work. Routine environmental clean-ups will be completed as the work progresses. Where additional ACM's detected (or suspected) all work shall cease in that particular area and the area fenced off until independent inspection/analysis has been completed.	Site Safety Rules (posted at the point of entry) Asbestos Awareness Course Refurbishment and Demolition Asbestos Survey ref S.J. 01410.	Asbestos awareness training Persons working under direct supervision of Competent Person.	Control of Asbestos Regulations 2012 COSHH 2002	Okay

RA/SM/002

10 of 15

Issue 01 - 2 May 2018

The Hazardous Waste Regulations 2005: Consignment Note



CONSIGNEE'S COPY

PART A Notification details

1 Consignment note code: **SLADENW100001**

2 The waste described below is to be removed from (name, address, postcode, telephone, e-mail, facsimile): **SLADEN HILL**
HALIFAX ROAD
LITTLEBOROUGH
LANCASHIRE
OL15 0LB

3 The waste will be taken to (name, address and postcode):
BRADLEY PARK WASTE MGT
LOWER QUARRY ROAD
Huddersfield HD2 1FN

4 The waste producer was (if different from 2) (name, address, postcode, telephone, e-mail, facsimile):

PART B Description of the waste

1 The process giving rise to the waste(s) was: **DEMOLITION**2 SIC (2007) for the process giving rise to the waste: **43.11.1**

3 WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code)(6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:		Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
			Component	Concentration (% or mg/kg)			
ASBESTOS CEMENT SHEET MIX	170605		CHRYSOTILE	0.1%	SOLID	H7	DRUM

The information given below is to be completed for each EWC identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN class(es)	Packing group(s)	Special handling requirements
170605	2590	DEMOLITION	9	III	RRR PRE TO BE WORN

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached tick here. ☐)

I certify that I today collected the consignment and that the details in A2, A3 and B3 are correct and I have been advised of any specific handling requirements.

Where this note comprises part of a multiple collection the round number and collection number are: **1**

1 Carrier name: **COLIN SMITH & SONS**
 On behalf of (name, address, postcode, telephone, e-mail, facsimile):
SLADEN FOLD FARM, SUMMIT
LITTLEBOROUGH OL15 0LP
01706 378558

2 Carrier registration no./reason for exemption: **CB04 123851**3 Vehicle registration no. (or mode of transport, if not road): **MX17 DZ2**

Signature: **[Signature]**
 Date: **28.10.2019** Time: **1400**

PART D Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1 Consignor name: **TAL TRUSTEE**
 On behalf of (name, address, postcode, telephone, e-mail, facsimile):
10 JAMES HAY PISHIP
DUNNYS HOLE
ST PAULS ROAD
SPALSBURY SP2 7BF

Signature: **[Signature]**
 Date: **28.10.2019** Time: **1400**

PART E Consignee's certificate

(where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)
170605	11220	✓	D5

1 I received this waste at the address given in A3 on: Date **28.10.19** Time **1400**2 Vehicle registration no. (or mode of transport if not road): **MX17 DZ2**3 Where waste is rejected please provide details: **MX17 DZ2**

Name: **KOLDWIN**
 On behalf of (name, address, postcode, telephone, e-mail, facsimile):

I certify that waste permit/exempt waste operation number: **234544A**

authorises the management of the waste described in B at the address given in A3.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are: **1**

Signature: **[Signature]**
 Date: **28.10.19** Time: **1400**

HWCN01v112

Form HWCN01v112

The Hazardous Waste Regulations 2005:
Consignment NoteEnvironment
Agency

CONSIGNEE'S COPY

PART A Notification details

1 Consignment note code: SLADEN1000022 The waste described below is to be removed from (name, address, postcode, telephone, e-mail, facsimile):
SLADEN HILL
HARLOW ROAD
LITTLEBOROUGH
LANCAIRE
BLIS CUB

3 The waste will be taken to (name, address and postcode):

BRADLEY PARK WASTE MGT
LOWE CUNCKY ROAD
HYDDERFIELD
W02 1FN

4 The waste producer was (if different from 2) (name, address, postcode, telephone, e-mail, facsimile):

PART B Description of the waste

1 The process giving rise to the waste(s) was: DEMOLITION 2 SIC (2007) for the process giving rise to the waste: A3-11-1

3 WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code(s) 6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:		Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
			Component	Concentration (% or mg/kg)			
<u>ABEON</u>							
<u>CEMENT SHED</u>	<u>170605</u>		<u>CRYSTAL</u>	<u>0.1%</u>	<u>SOLID</u>	<u>H7</u>	<u>ROLO</u>
<u>MIX</u>							

The information given below is to be completed for each EWC identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN classes	Packing group(s)	Special handling requirements
<u>170605</u>	<u>2590</u>	<u>DEMOLITION</u>	<u>6</u>	<u>III</u>	<u>RPE PPE TO BE WORN</u>

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached tick here. ☐)

I certify that I today collected the consignment and that the details in A2, A3 and B3 are correct and I have been advised of any specific handling requirements.

Where this note comprises part of a multiple collection the round number and collection number are:

1 Carrier name: COIN SMITH & SONS
On behalf of (name, address, postcode, telephone, e-mail, facsimile):
SLADEN HILL FARM, SUMMIT
LITTLEBOROUGH
LANCAIRE2 Carrier registration no./reason for exemption: 01700
3785583 Vehicle registration no. (or mode of transport, if not road): MX17 D22Signature: [Signature]Date 29-10-2019 Time 09:00

PART D Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1 Consignor name: PAK TRUSTEES
On behalf of (name, address, postcode, telephone, e-mail, facsimile):
C/O JAMES HAY PARK
DUINNS FORD
ST PAULS ROAD
SARISBURY
SP2 7BNSignature: [Signature]
Date 29-10-2019 Time 13:00

PART E Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)
<u>170605</u>	<u>5500</u>	<u>✓</u>	<u>D</u>

1 I received this waste at the address given in A3 on: Date 29-10-19 Time 13:00

2 Vehicle registration no. (or mode of transport if not road):

3 Where waste is rejected please provide details: MX17 D22Name: [Signature]

On behalf of (name, address, postcode, telephone, e-mail, facsimile):

I certify that waste permit/exempt waste operation number:

authorises the management of the waste described in B at the address given in A3.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are:

Signature: [Signature]Date 29-10-19 Time 13:00

HWCN01v112

Form HWCN01v112

The Hazardous Waste Regulations 2005:
Consignment NoteEnvironment
Agency

CONSIGNEE'S COPY

PART A Notification details

1 Consignment note code: **SLADEN100003**

2 The waste described below is to be removed from (name, address, postcode, telephone, e-mail, facsimile): **SHADEN MILL**
ITALIAK ROAD
LITTLEBOROUGH
LANCASHIRE
OL15 0LB

3 The waste will be taken to (name, address and postcode):
BRADLEY PARK WASTE MGT
LOWER QUARRY ROAD
HUDDERSFIELD HD2 1FN

4 The waste producer was (if different from 2) (name, address, postcode, telephone, e-mail, facsimile):

PART B Description of the waste

If continuation sheet used, tick here ☐

1 The process giving rise to the waste(s) was: **DEMOLITION** 2 SIC (2007) for the process giving rise to the waste: **43.11.1**

3 WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code)(6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:		Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
			Component	Concentration (% or mg/kg)			
ASBESTOS CEMENT SHEET MIX	170605		CHRISTIAN	0.1%	SOLID	H7	ROLO

The information given below is to be completed for each EWC identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN class(es)	Packing group(s)	Special handling requirements
170605	2590	DEMOLITION	9	IIIT	RPE PPE TO BE WORN

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached tick here: ☐)

I certify that I today collected the consignment and that the details in A2, A3 and B3 are correct and I have been advised of any specific handling requirements.

Where this note comprises part of a multiple collection the round number and collection number are:

1 Carrier name: **COLIN SMITH & SONS** **01706 378558**
On behalf of (name, address, postcode, telephone, e-mail, facsimile):
SHADEN FOLD FARM
SUNNIT, LITTLEBOROUGH
OL15 0LB

2 Carrier registration no./reason for exemption: **CBDU 123851**
Vehicle registration no. (or mode of transport, if not road): **MX17 D22**

3 Vehicle registration no. (or mode of transport, if not road):

Signature: **MDA**Date: **29.10.2019** Time: **11.10**

PART D Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1 Consignor name: **PAL TRUSTEES**
On behalf of (name, address, postcode, telephone, e-mail, facsimile): **CLOJANET HAY PISHIP**
DUNNS HAY
ST PAULS ROAD SP2 7BF
SALISBURY

Signature: **SEAN BURKE**Date: **29.10.2019** Time: **11.10**

PART E Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)
170605	10000	✓	D5

1 I received this waste at the address given in A3 on: Date **29.10.19** Time **11.20**

2 Vehicle registration no. (or mode of transport if not road):

Name: **Ks/loval**

On behalf of (name, address, postcode, telephone, e-mail, facsimile):

3 Where waste is rejected please provide details: **MX17 D22**

I certify that waste permit/exempt waste operation number:

LP3434AA
authorises the management of the waste described in B at the address given in A3.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are:

Bradley Park Waste Management

Signature: **L**Date: **29.10.19** Time: **11.20**



Demolition crush which has now been removed from Site.



Demolition materials separated for removal.