

Phase 2: Site Investigation

**Site A, Leconfield Industrial Estate, Cleator Moor
Copeland Borough Council**

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PHASE 2 SITE INVESTIGATION REPORT

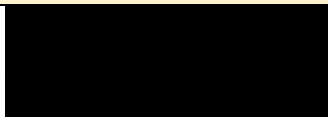
SITE A, LECONFIELD INDUSTRIAL ESTATE, CLEATOR MOOR

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Revision	Date	Prepared By	Signed
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1 EXECUTIVE SUMMARY

Site Address	Leconfield Industrial Estate, Cleator Moor
Proposed Development	The site is outlined for development of a storage yard in the west and a new building in the east..
Fieldwork	• 9no rotary open-hole/cored boreholes (BH01 to RBH09 inclusive to a maximum depth of 40.00mbgl with 2no monitoring pipes in BHs 07 & 08. • 2no days slit trenching, 1 day in the area of each shaft (301515-006 & 301515-008) including anomaly A2. • 16no machine excavated trial pits (TP01 to TP16) were dug to a maximum depth of 1.10mbgl.
Ground Conditions	• Made ground was encountered to depths of between 1.30mbgl and 10.20mbgl. • Firm to stiff consistency sandy gravelly medium to high strength encountered (0.90-5.00m thick). • Locally underlain by dense sands and gravels (1.60-10.90m thick). • Rockhead between 7.30 & 18.00mbgl, generally comprising sandstones and mudstones with thin intact coal bands. • Groundwater was noted locally between 0.40 and 17.10m.
Contamination Testing Results	• 13no made ground samples tested. • Four made ground samples tested. • Locally elevated sulphates – no other exceedances recorded. • No asbestos fibres. • Slightly to strongly alkaline pH. • Five leachate samples tested – generally elevated metals.
Contamination Analysis	• Given the site's proposed Commercial land use, the levels of contamination recorded on site are unlikely to pose a risk to the current and future users of the site. • If any zones of odorous, brightly coloured or suspected contaminated ground or groundwater are encountered then work should cease in that area until the material has been investigated. The results of the investigation will therefore determine whether or not remediation will be required. • Made ground classed as posing a low to moderate/high risk with respect to construction workers. PPE for workers. Damping down of site during dry windy conditions. • Controlled waters unlikely to be at risk. • With respect to utilities pH was elevated; as a minimum all services should be laid in clean trenches. • Sub surface concrete should generally be designed to DS-1 ACEC (Class AC-1), increasing to DS-4 AC-4 where in contact with slag. This assumes mobile groundwater conditions.
Geotechnical Testing Results	• Cohesive deposits medium to high strength based on SPT N values. • Granular deposits locally loose generally medium dense to very dense based on SPT N values. • UCS results ranged from 12.2-23.5MPa. • Point Load Tests ranged from 0.07 to 3.14Is(50)MPa. • CBRs within made ground ranged from 3-15%. • Moisture contents between 9.2 and 18%. • Sulphates between <10-490mg/l, pH slightly alkaline.
Mining Assessment	• Similarly to the historic WYG report (12no boreholes), no voids/workings were recorded within the rotary drilling (additional 9no boreholes). • No evidence of the shafts based on historical geophysics and slit trenching. • Recommended to construct storage yard with structural precautions to mitigate against risks from the off-site shafts.
Geotechnical Analysis & Foundation Recommendations	• Storage yard to be constructed 450mm thick (recommended reinforced) atop compacted granular fill atop the competent fused slag. • For the proposed building, piled foundations are recommended – this report should be made available to a competent piling contractor. • Settlements within 25mm. • Normal earthworks plant for excavations.

2 INTRODUCTION

2.1 Authorisation

The site investigation described in this report was carried out by Solmek to the instructions of Billingham George & Partners, on behalf of Copeland Borough Council, on land located at Leconfield Industrial Estate, Cleator Moor.

Sources of information, including previous work undertaken at the site, are detailed below:

- *AECOM Geotechnical & Structural Design Report (60520781) December 2016.*
- *WYG Phase 1 Desk Study (A114312) January 2020.*
- *WYG Phase 2 Site Investigation (A114312-1) November 2020.*

Reference should be made to the above report for details of the site's history and environmental setting, the ground conditions encountered, and the results of historical contamination analysis.

2.2 Scope of Works

The site is expected to be developed with a new BOC storage yard in the west, and a new BOC hub building in the northeast. The areas of the site proposed for development are shown as Figure 3 (Appendix A).

The following steps may be required in the investigation and remediation of potentially contaminated land:

- Phase 1: Desk Study
- Phase 2: Intrusive Investigation
- Phase 3: Remediation Statement
- Phase 4: Validation Reports

Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages.

A geotechnical and environmental (Phase 2) investigation including a ground gas risk assessment was requested. The fieldwork and testing was generally carried out according to;

- BS 5930:2015+A1:2020 Code of Practice for Ground Investigations
- BS 10175:2011+A1:2013 Investigation of Potentially Contaminated Sites – Code of Practice.
- CIRIA C665:2007 Assessing Risks Posed by Hazardous Ground Gas to Buildings
- BS 8485:2015+A1:2019 Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments
- Rock and soil descriptions shall be in accordance with BS EN ISO 14689-1:2003, BS EN ISO 14688-1:2002 and BS EN ISO 14688-2:2004
- CIRIA C758D Abandoned Mine Workings Manual

This report forms part of a Stage 1 Risk Assessment (Generic Quantitative Risk Assessment) with respect to the Environment Agency's guidance document *Environment Agency Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*.

The information provided in this report is based on the investigation fieldwork and is subject to the comments and approval of the various regulatory authorities. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Solmek reserve the right to alter conclusions and recommendations should further information be available or provided. Any schematic representation or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

3 SITE DESCRIPTION AND FIELDWORK

A site inspection, as recommended in BS 5930 and BS 10175, was undertaken by WYG in 2020 and the site

was reappraised by Solmek prior to the site works on February 2022. The site is centred at Ordnance Survey Co-ordinates 301380, 515510 and covers approximately 15.46Ha.

The site is generally flat, occupied by light industrial and commercial developments with numerous relic slabs present following previous demolition works.

There are numerous areas of open land and vegetation noted across and around the site with localised evidence of burning/flytipping noted.

The surrounding areas of the site are mixed with residential and commercial land-uses present.

3.1 Fieldwork

The fieldwork commenced on 16th February 2022. The extent of the investigation was:

- Topographic setting out of shafts 301515-006 & 301515-008 as well as historic anomaly A2 associated with 301515-006.
- Topographic survey of all borehole locations.
- 9no rotary open-hole/cored boreholes (BH01 to RBH09 inclusive to a maximum depth of 40.00mbgl.
 - All nine boreholes were drilled to investigate the presence of historic mine workings.
 - Within BHs 04, 07 & 09, rotary coring was undertaken initially to retrieve rock-core to provide geological information for pile design.
 - BH01 & BH02 were drilled to target the area of the proposed BOC yard.
 - BHs 07-09 were drilled to target the area of the proposed BOC hub building.
 - BHs 03-06 were drilled provide site investigation information in areas of the site considered for future development.
- Gas monitoring wells were installed in BH's 07 & 08.
 - The wells were spaced at <25m centres evenly around the area of the proposed BOC hub building, in accordance with CIRIA C665.
- 2no days slit trenching, 1 day in the area of each shaft (301515-006 & 301515-008) including anomaly A2.
 - The trenches were excavated in an X centred over the coordinates of the shafts.
- 16no machine excavated trial pits (TP01 to TP16) were dug to a maximum depth of 1.10mbgl.
 - TPs 01 to 05 were located to target the area of the proposed BOC yard.
 - TPs 13 to 16 were located to target the area of the proposed BOC hub building.
 - TPs 06-12 were excavated to provide site investigation information in areas of the site considered for future development.
- Insitu testing in the exploratory positions as Hand Shear Vanes, California Bearing Ratio (CBR) and Standard Penetration Tests (SPTs).
- Retrieval of samples for geotechnical and chemical testing.

The trial pits and boreholes were respectively backfilled with clean arisings and bentonite/installations upon completion. Selected plates of the trial pits are presented in Appendix A.

Descriptions of the strata encountered in the boreholes and trial pits together with details of sampling and groundwater are presented in Appendix B of this report. A plan showing the location of the boreholes and trial pits can be found in Appendix A (Figure 2).

4 GROUND CONDITIONS

A summary of the ground conditions encountered is given below.

4.1 Made Ground

Made ground was relatively uniform across the site and was only penetrated within the boreholes, proven to

a minimum depth of 1.30mbgl (BH06) and a maximum depth of 10.20mbgl (BH03). The made ground consisted of a variable surface covering generally of topsoil but locally comprising concrete or tarmac.

This was then generally underlain by slag, initially in a granular form locally mixed with other granular materials (ash, brick, sandstone, clinker). This was in turn underlain by a fused slag which the excavator was unable to excavate through. Standard Penetration Tests within the slag each yielded N values of 50+ (refusal).

4.2 Obstructions

Localised surface concrete was encountered, within TP09 (0.15m thick), BH05 (0.50m). Across the site slag was encountered, posing a significant obstruction.

4.3 Natural Deposits

Proven to underlie the made ground deposits within the boreholes only, natural ground generally comprised firm to stiff consistency sandy gravelly medium to high strength clay, ranging in thickness from 0.90m to 5.00m.

Locally (BH04, BH05, BH06, BH08), the cohesive deposits were underlain (overlain in BH09) by medium to very dense sands and gravels (1.60-10.90m thick).

Locally, natural deposits were not encountered (BH01), with the made ground directly overlying rockhead.

4.4 Solid Geology

Rockhead, generally comprising sandstone or mudstone, was encountered within the rotary boreholes, between 7.30 (BH03) and 18.00mbgl (BH05). Where coring was undertaken (BHs 04, 07 & 09), the sandstone was logged as weak to medium strong thinly bedded to thickly laminated partially to slightly weathered sandstone, with the encountered mudstone generally logged as very weak to weak very thinly laminated partially unweathered mudstone. Photographs of the retrieved rock core are provided in Appendix A.

The rotary boreholes then continued to between 30 and 40.00mbgl, generally encountering interbedded sandstones and mudstones. Locally, the rock was inferred to be highly fractured resulting in loss of flush.

No voids or workings were encountered, however intact coal seams were noted locally. Table 1 below summarises the coal seams that were encountered within seven of the nine rotary boreholes.

TABLE 1: COAL SEAM SUMMARY

Location	Strata	Top of Coal Seam (mAOD)	Top of Coal Seam (mbgl)	Coal Seam Thickness (m)	Flush Returns
BH01	Coal – Intact	70.49	10.20	1.50	100%
BH02	Coal – Intact	64.90	16.40	1.40	100%
BH03	Coal – Intact	72.58	10.40	0.10	100%
	Coal – Intact	65.88	17.10	0.80	100%
	Coal – Intact	63.58	19.40	0.60	100%
BH04	Coal – Intact	58.38	24.70	0.80	100%
BH05	Coal – Intact	60.04	23.00	0.70	100%
	Coal – Intact	46.84	36.20	0.30	100%
BH06	Coal – Intact	70.01	12.90	0.50	100%
	Coal – Intact	59.61	23.30	0.40	100%
BH09	Coal – Intact	61.01	22.10	0.30	100%

4.5 Groundwater

Groundwater strikes, where encountered, are presented on the exploratory logs (Appendix B) and are summarised below in Table 2:

TABLE 2: SUMMARY OF GROUNDWATER STRIKES

Exploratory Position	Depth Encountered (mbgl)	Depth after 20 minutes (mbgl)	Strata
BH01	10.20	-	Coal
BH02	9.60	-	Made Ground
BH03	5.90	-	Clay
BH04	9.10	-	Sandy Gravel
	16.40	-	Sandstone
BH05	5.90	-	Clay
	17.10	-	Gravel
BH06	4.70	-	Clay
BH07	10.20	-	Clay
BH08	17.10	-	Sandstone
BH09	15.20	-	Sandstone
TP06	0.40	-	Made Ground

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Also, the water levels and minor seepages may have been masked by the use of water flush. Therefore, water levels significantly higher than those found during this investigation may be encountered.

5 CONTAMINATION TESTING RESULTS

The proposed development of the site is to involve the construction of a new yard in the west and a new building in the east, within an existing industrial estate. The chemical samples were generally retrieved in line with BS ISO 18400-105:2017 *Soil Quality. Sampling*. The chemical results are presented in Appendix C.

5.1 Site Characterisation & Historic Testing

Within the WYG Phase 1 Desk Study, a preliminary conceptual model was formed based on the information obtained. The initial risk was based on the site history which recorded iron and steel works from 1863 with slag heaps noted, prior to the industrial estate being noted from 1962.

An overall low to high risk was provided for various receptors:

- Human Health – Low to High
- Controlled Water – Moderate
- Current Site Users (on-site workers/visitors) – Low to Moderate
- Vegetation – Low
- Construction Materials – Moderate

The WYG Phase 2 Site Investigation then undertook the below soils contamination testing:

- 32no Metals, semi-metals, non-metals, inorganic determinants
- 32no Asbestos identification screenings
- 32no Speciated Polyaromatic Hydrocarbons (PAHs)
- 32no Total Petroleum Hydrocarbon Criteria Working Group fractions (TPHCWG)
- 6no Waste Acceptance Criteria (WAC) Tests
- 4no Polychlorinated Biphenyls (PCBs)
- 9no Volatile Organic Compounds (VOCs)
- 9no Semi-Volatile Organic Compounds (SVOCs)

In addition, the below groundwater testing was undertaken:

- 4no Metals, semi-metals, non-metals, inorganic determinants
- 4no Speciated Polyaromatic Hydrocarbons (PAHs)
- 4no Total Petroleum Hydrocarbon Criteria Working Group fractions (TPHCWG)
- 4no Volatile Organic Compounds (VOCs)
- 4no Semi-Volatile Organic Compounds (SVOCs)

For soils, generally speaking no exceedances were recorded, with the exception of pH (11no samples), beryllium (2no samples), benzo(b)fluoranthene (1no sample) and asbestos (1no sample).

For the 4no groundwater samples, exceedances were noted within each for copper, PAHs and TPH with further localised exceedances for nitrite, pH, sulphate, NH₃, NH₄, nickel and selenium.

Following the above test results, a refined conceptual model was put forth, summarised below:

- Human Health – Low (Soils) to High (Ground Gas)
- Controlled Water – Low to Moderate
- Current Site Users (on-site workers/visitors) – Low (Soils) to High (Ground Gas)
- Vegetation – Low
- Construction Materials – Moderate

5.2 Contamination Testing and Rationale

To provide information upon the possibility of ground contamination 13no samples of made ground were selected for shallow contamination testing. A Low to High overall contamination risk was highlighted in the Phase 1 Desk Study and subsequent Phase 2. This coupled with the end use being Commercial means that a further 13no samples are considered appropriate for testing. The samples selected are detailed below:

- TP01 – 0.10-0.20m (Made ground – topsoil)
- TP02 – 0.20-0.30m (Made ground – granular)
- TP03 – 0.50-0.60m (Made ground – slag)
- TP04 – 0.20-0.30m (Made ground – slag)
- TP05 – 0.00-0.10m (Made ground – topsoil)
- TP06 – 0.40-0.60m (Made ground – granular)
- TP07 – 0.80-0.90m (Made ground – granular)
- TP10 – 0.00-0.10m (Made ground – topsoil)
- TP12 – 0.10m (Made ground – topsoil)
- TP13 – 0.00-0.10m (Made ground – topsoil)
- TP14 – 0.20m (Made ground – slag)
- TP15 – 0.10-0.20m (Made ground – granular)
- TP16 – 0.30m (Made ground – cohesive)

The samples selected are considered to provide coverage of the made ground strata from across the site that would be most likely to be exposed during future site works. The samples were tested for the following contaminant suites:

- 13no Metals, semi-metals, non-metals, inorganic determinants
- 13no Asbestos identification screenings
- 13no Speciated Polyaromatic Hydrocarbons (PAHs)

- 5no Total Petroleum Hydrocarbon Criteria Working Group fractions (TPHCWG)

In addition, five samples were sent for Waste Acceptance Criteria (WAC) Testing:

- TP01 – 0.10-0.20m (Made ground – topsoil)
- TP03 – 0.50-0.60m (Made ground – slag)
- TP13 – 0.00-0.10m (Made ground – topsoil)
- TP14 – 0.20m (Made ground – slag)
- TP16 – 0.30m (Made ground – cohesive)

Leachate analysis was also undertaken on the below samples:

- TP02 – 0.20-0.30m (Made ground – granular)
- TP03 – 0.50-0.60m (Made ground – slag)
- TP07 – 0.80-0.90m (Made ground – granular)
- TP15 – 0.10-0.20m (Made ground – granular)
- TP16 – 0.30m (Made ground – cohesive)

5.3 Test Results

Based on the proposed development at the site, the test results have been compared to a series of Land Quality Management (LQM) Suitable for Use Levels (S4UL) based on a Commercial land use. These are the most up to date thresholds published in December 2014.

The value for lead has been compared with the Category 4 Screening Level (March 2014) developed by Contaminated Land: Applications In Real Environments (CL:AIRE).

The test results are presented in Appendix C, and a summary is provided below in Tables 3 and 4.

TABLE 3: SUMMARY OF INORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Commercial Threshold Value	Number of Results Exceeding Threshold Value
Metals						
Cadmium	mg/kg	4	<0.1	0.67	190	0
Chromium	mg/kg	13	3.4	23	8600	0
Copper	mg/kg	13	4.2	42	68000	0
Lead	mg/kg	13	2.1	47	2300*	0
Mercury	mg/kg	3	<0.1	0.9	1100	0
Nickel	mg/kg	13	3.5	50	980	0
Zinc	mg/kg	13	5.4	86	730000	0
Semi metals and non metals						
Arsenic	mg/kg	13	5.3	50	640**	0
Boron	mg/kg	9	<0.4	1.7	240000	0
Selenium	mg/kg	13	0.33	2.7	12000	0
Inorganic chemicals						
Cyanide (Total)	mg/kg	4	<0.5	0.8	1580**	0
Sulphate (2:1 Water Soluble)	mg/l	13	44	2200	2000^	1
Other						
pH	pH	-	9.0	10.6	5.5^	0
* Category 4 Screening Levels, March 2014						
** CLEA Software Version 1.06 (pH7 and 1%SOM)						
^ EA Threshold Values						

5.4 Metals, Semi Metals and Non Metals

No samples indicated raised levels of contamination above the S4UL threshold values, based on the 13no samples tested. It is noted that historically 33no samples were tested with the only exceedance relating to beryllium (2no samples)

5.5 Inorganic Chemicals

Soluble sulphates (potentially aggressive to foundation concrete) were recorded between 44 and 2200mg/l. One of the samples were elevated above levels affecting human health (TP03 0.20-0.30m) whilst eight of the samples exceeded the BRE Special Digest 1 500mg/l limit for the sulphate classification of concrete.

The results of the pH testing were between 9.0 and 10.6, which is consistent with slightly alkaline conditions. It is noted that historically 33no samples were tested with pH ranging from 7.2 to 11.4.

5.6 Organic Chemicals

The organic thresholds vary depending on the levels of soil organic matter (SOM).

The average SOM recorded across the site was 3.52% therefore a SOM of 6% has been used to determine the S4UL thresholds. Table 4, below, summarises the results.

TABLE 4: SUMMARY OF ORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Commercial Threshold Value at 2.5% SOM	Number of Results Exceeding Threshold Value
TPH Aliphatic Fractions						
Aliphatic (C5-C6)	mg/kg	0	<1	-	5900	0
Aliphatic (C6-C8)	mg/kg	0	<1	-	17000	0
Aliphatic (C8-C10)	mg/kg	0	<1	-	4800	0
Aliphatic (C10-C12)	mg/kg	1	<1	41	23000	0
Aliphatic (C12-C16)	mg/kg	1	<1	50	82000	0
Aliphatic (C16-C21)	mg/kg	1	<1	7	1700000	0
Aliphatic (C21-C35)	mg/kg	1	<1	230	1700000	0
Aliphatic (C35-C44)	mg/kg	0	<1	-	1700000	0
TPH Aromatic Fractions						
Aromatic (C5-C7)	mg/kg	0	<1	-	46000	0
Aromatic (C7-C8)	mg/kg	0	<1	-	110000	0
Aromatic (C8-C10)	mg/kg	0	<1	-	8100	0
Aromatic (C10-C12)	mg/kg	0	<1	-	28000	0
Aromatic (C12-C16)	mg/kg	1	<1	5.9	37000	0
Aromatic (C16-C21)	mg/kg	1	<1	29	28000	0
Aromatic (C21-C35)	mg/kg	1	<1	160	28000	0
Aromatic (C35-C44)	mg/kg	1	<1	21	28000	0
Speciated PAH						
Naphthalene	mg/kg	0	<0.1	-	460	0
Acenaphthylene	mg/kg	0	<0.1	-	97000	0
Acenaphthene	mg/kg	0	<0.1	-	97000	0
Fluorene	mg/kg	0	<0.1	-	68000	0
Phenanthrene	mg/kg	1	<0.1	1.5	22000	0
Anthracene	mg/kg	1	<0.1	0.64	540000	0
Fluoranthene	mg/kg	3	<0.1	6.7	23000	0
Pyrene	mg/kg	3	<0.1	6.1	54000	0
Benzo[a]anthracene	mg/kg	1	<0.1	3.6	170	0
Chrysene	mg/kg	1	<0.1	3.8	350	0
Benzo[b]fluoranthene	mg/kg	1	<0.1	4	44	0
Benzo[k]fluoranthene	mg/kg	1	<0.1	1.8	1200	0
Benzo[a]pyrene	mg/kg	1	<0.1	3.1	35	0
Benzo[g,h,i]perylene	mg/kg	1	<0.1	1.5	4000	0
Dibenz(a,h)Anthracene	mg/kg	1	<0.1	0.65	3.6	0
Indeno(1,2,3-c,d)Pyrene	mg/kg	1	<0.1	1.6	510	0
Total PAH	mg/kg	1	<2	35	1000*	0
Total Phenol	mg/kg	0	<0.3	-	1500	0
* EA Threshold Values						

No samples indicated raised levels of contamination above the S4UL threshold values, based on the 13no samples tested.

5.7 Asbestos

From the 13no samples subject to asbestos screening, no asbestos fibres were recorded in any of the samples. It is noted that historically 33no samples were tested with asbestos recorded within just 1no sample, however this sample (WS103) was located in an area outside of the two areas considered for development within this report.

5.8 Waste Acceptance Criteria (WAC) Testing

Five WAC tests were undertaken on samples from across the site. The samples were specifically chosen to target the three main strata encountered on-site:

- TP01 – 0.10-0.20m (Made ground – topsoil)
- TP03 – 0.50-0.60m (Made ground – slag)
- TP13 – 0.00-0.10m (Made ground – topsoil)
- TP14 – 0.20m (Made ground – slag)
- TP16 – 0.30m (Made ground – cohesive)

Waste Classification and WAC testing are discussed in full in Section 6.7.

It would be up to the discretion of the relevant Waste Disposal Company whether further testing would be necessary to determine whether the waste could be classified as hazardous, and whether or not to accept waste is at the discretion of the Waste Disposal Company.

5.9 Leachates

Five samples have been subject to leachate testing. The results have been compared, where available, to UK Drinking Water Standards (DWS), otherwise EA Leachate Quality Thresholds and WHO Guidelines (2005) have been used. Results are summarised within Table 5 below.

TABLE 5: SUMMARY OF LEACHATE CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	UK Drinking Water Standards	Number of Results Exceeding Threshold Value
Inorganic Contaminants						
Boron	µg/l	5	95	200	2000	0
Cadmium	µg/l	5	0.23	0.92	5	0
Chromium	µg/l	4	<0.5	2.6	50	0
Copper	µg/l	4	<0.5	61	2000	0
Lead	µg/l	5	4.6	54	25	3
Mercury	µg/l	5	0.08	0.69	1	0
Nickel	µg/l	4	0.5	29	20	1
Zinc	µg/l	5	74	3400	5000	0
Arsenic	µg/l	5	1.3	45	10	2
Selenium	µg/l	5	8.1	250	10	4
Cyanide	µg/l	0	<0.05	-	50	0
pH	pH	-	8.9	10.7	>5.5	0
W.S. Sulphate	mg/l	5	2.2	61	250	0
PAH						
Acenaphthene	µg/l	0	<0.1	-	0.1	0
Acenaphthylene	µg/l	0	<0.1	-	0.1	0
Anthracene	µg/l	0	<0.1	-	0.1	0
Benzo[a]anthracene	µg/l	0	<0.1	-	0.1	0
Benzo[a]pyrene	µg/l	0	<0.1	-	0.1	0
Benzo[b]fluoranthene	µg/l	0	<0.1	-	0.1	0
Benzo[k]fluoranthene	µg/l	0	<0.1	-	0.1	0
Benzo[g,h,i]perylene	µg/l	0	<0.1	-	0.1	0
Chrysene	µg/l	0	<0.1	-	0.1	0
Dibenz(a,h)Anthracene	µg/l	0	<0.1	-	0.1	0
Fluoranthene	µg/l	0	<0.1	-	0.1	0
Fluorene	µg/l	0	<0.1	-	0.1	0
Indeno(1,2,3-c,d)Pyrene	µg/l	0	<0.1	-	0.1	0
Naphthalene	µg/l	0	<0.1	-	0.1	0
Phenanthrene	µg/l	0	<0.1	-	0.1	0
Pyrene	µg/l	0	<0.1	-	0.1	0
Total PAH	µg/l	0	<2	-	0.2**	0
Total Phenol	µg/l	0	<0.03	-	0.5*	0
TPH Aliphatic Fractions						
Aliphatic (C5-C6)	µg/l	0	<0.1	-	15000*	0
Aliphatic (C6-C8)	µg/l	0	<0.1	-	15000*	0
Aliphatic (C8-C10)	µg/l	0	<0.1	-	300*	0
Aliphatic (C10-C12)	µg/l	0	<0.1	-	300*	0
Aliphatic (C12-C16)	µg/l	0	<0.1	-	300*	0
Aliphatic (C16-C35)	µg/l	0	<0.1	-	300*	0
Aliphatic (C16-C35)	µg/l	0	<0.1	-	300*	0
Aliphatic (C35-C44)	µg/l	0	<0.1	-	300*	0
TPH Aromatic Fractions						
Aromatic (C5-C7)	µg/l	0	<0.1	-	10*	0
Aromatic (C7-C8)	µg/l	0	<0.1	-	10*	0
Aromatic (C8-C10)	µg/l	0	<0.1	-	100*	0
Aromatic (C10-C12)	µg/l	0	<0.1	-	100*	0
Aromatic (C12-C16)	µg/l	0	<0.1	-	100*	0
Aromatic (C16-C21)	µg/l	0	<0.1	-	90*	0
Aromatic (C21-C35)	µg/l	0	<0.1	-	90*	0
Aromatic (C35-C44)	µg/l	0	<0.1	-	90*	0
* WHO Guidelines 2005						
** EA leachate quality thresholds						
*** EQS Freshwater						

From the five samples subject to leachate analysis, the below exceedances were recorded:

- TP02 – 0.20-0.30m (Made ground – granular)
- TP03 – 0.50-0.60m (Made ground – slag) recorded elevated lead, nickel & selenium
- TP07 – 0.80-0.90m (Made ground – granular) recorded elevated lead, arsenic & selenium
- TP15 – 0.10-0.20m (Made ground – granular) recorded elevated selenium
- TP16 – 0.30m (Made ground – cohesive) recorded elevated lead, arsenic & selenium

5.10 Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *“identify and remove unacceptable risks to human health and the environment”* and to *“seek to ensure that contaminated land is made suitable for its current use”*. Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as *“the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land”* and by *“the scale and seriousness of such harm or pollution if it did occur”*.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *“land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.”* Categories 3 and 4 *“encompass land which is not capable of being determined on such grounds”*.

See Appendix E for additional notes on contamination guidelines.

6 CONCEPTUAL MODEL AND CONTAMINATION ANALYSIS

The contamination conceptual model in Table 6 identifies the potential pollution linkages present on site based on source – pathway – receptor relationships.

TABLE 6: CONCEPTUAL MODEL

Source	Pathway	Receptor	Risk Rating	Comments
Asphyxiating or explosive ground gases - Made ground (<10.20m) - No shallow coal mining - Landfills within 250m	Ground gas migration - Migration through permeable soils - Inhalation	Future site users Transient adult workers	Moderate /Low	Low risk for the proposed yard therefore no monitoring is required, however there may be a risk to the proposed building therefore monitoring is underway.
		Users during development Construction workers	Low	
Areas of contamination hazardous to human health (Commercial Thresholds) 33no samples tested historically - Localised exceedances (pH, beryllium, benzo(b)fluoranthene, & asbestos) 13no further samples tested - Elevated sulphate within 1no sample - No further exceedances noted	- Inhalation - Dust ingestion - Dermal contact	Future site users Transient adult workers	Low	Contamination risks will be mitigated by encapsulation with by proposed structure footprint (proposed building) and hardstanding (yard area).
		Users during development Construction workers	Moderate /Low	Mitigation measures required during construction. Consideration to be given to Health and Safety Executive: <i>Protection of Workers and the General Public During the Development of Contaminated Land</i> .
	- Inhalation - Dust ingestion	Users of surrounding sites Transient adult workers	Low	Potential moderate risk during remediation/construction from dust generation. Consideration to be given to dust suppression, in line with BRE: <i>The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance</i> .
Areas of elevated Leachate/Groundwater contamination 4no groundwater samples tested historically. - Exceedances within each. 5no leachate samples tested - Exceedances within 4no samples for metals	Leaching of mobilised contaminants	Solid geology Secondary Aquifer – A	Low	Localised contamination overlying a medium sensitivity aquifer, however overlain by low permeability drift deposits.
		Drift geology Secondary Aquifer – Undifferentiated	Low	The relatively low permeability and low sensitivity aquifer is not considered to be at risk.
	- Drainage - Lateral migration - Accumulation of contaminated sediment	Surface water features Nor Beck culverted to the west	Low	Culverted watercourse not considered to be at risk.
Areas of phytotoxic contamination	Uptake via roots and leaf surfaces	Vegetation None proposed	Very Low	No potential for Vegetation impact as no vegetation is proposed.
Areas of contamination above service fabric or BRE Special Digest 1 thresholds	Direct contact	Construction Materials Concrete	Moderate	Mitigation through use of sulphate resistant concrete where in contact with made ground (made ground classified as DS-4 AC-4 in WYG report).
		Construction Materials Service Fabric	Moderate	Polyethylene and copper piping to be avoided and prudent to lay any service within a clean bedding.

In general terms, future users, construction workers and construction materials are **potentially most** at risk as pollution linkages may be present for each of these receptors. Users of the site, users of the surrounding sites, controlled waters and vegetation are considered to be at **potentially less** of a risk.

Mitigation measures to reduce the risks identified for each receptor are discussed in the following sections.

6.1 Users of the Site Once Development is Complete

The users of the site, particularly construction workers, are likely to be exposed to contaminants present in the soils beneath the site during redevelopment work. **Potential** exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatised compounds, and inadvertent soil ingestion.

To establish if the levels of contaminants present on site may pose a risk to the health of the future users of the site the results of the contamination testing have been compared to a series of LQM/CIEH S4UL based on a Commercial land use.

The historic WYG report tested 33no samples across the whole site, whilst the Solmek report tested a further 13no samples focussing primarily on the two areas of proposed development.

The WYG report recorded exceedances for pH (11no samples), beryllium (2no), benzo(b)fluoranthene (1) and asbestos (1no), whilst the Solmek report recorded exceedances for sulphate only (1no sample).

pH and sulphate are not considered to pose significant risks to human health receptors, therefore the exceedances of concern are limited to just 4no of the 49no total samples tested to date. Furthermore, the asbestos and one of the beryllium results were from samples taken outside of the two areas of proposed development.

Therefore, based on the testing results within the two areas proposed for development, the encountered contamination levels are generally low.

The new development is expected to comprise a new storage yard and a new commercial building. Based on the **shallow** soil contamination testing, it is considered that the levels of contamination are unlikely to pose a risk to future users of the site, particularly as the site will be encapsulated either by buildings or hardstanding.

6.2 Construction Workers and Users of Surrounding Sites

Short term human exposure to contaminants present in soils can occur via several pathways during the construction and ground works phase of the development. These include dermal absorption after contact with contaminated ground, inhalation of soil or dust (including windblown dust), inhalation of volatised compounds, inadvertent soil ingestion and contact with contaminated groundwater.

It is considered that the encountered levels of contamination are unlikely to pose a risk to construction workers and users of surrounding sites. As good practice, full PPE must be employed in accordance with Health and Safety Executive: *Protection of Workers and the General Public During the Development of Contaminated Land* and safeguards should be taken to limit dust during ground works, and access to the public should be restricted. Construction workers should use gloves as a precaution when handling any fill materials. Provision of suitable hygiene facilities are needed for site workers.

Although asbestos was not detected from the soil samples subjected to testing within this investigation, the possibility still exists that asbestos containing materials may still be present on site and currently lie undetected. It is therefore advised that a 'watching brief' is undertaken during the initial site strip and any excavation works and advice sought if asbestos is found or suspected.

During dry weather, any excavations may require clean water to be sprinkled at shallow depth to prevent excess dust escaping to off-site receptors. Monitoring of dust concentrations during construction should be given careful consideration to ensure Monitoring of dust concentrations during construction should be given careful consideration to ensure occupational exposure levels are not exceeded. A moisture content of >15% is required to inhibit dust migration. Works should be undertaken in line with BRE: *The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance*.

6.3 Vegetation

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, nickel, and zinc.

For this development, no vegetation is proposed therefore vegetation is not considered to be a sensitive receptor.

6.4 Ground and Surface Water

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology.

From the site investigation undertaken, ground conditions broadly comprise deep made ground primarily of slag over drift deposits of sandy gravelly clays overlying sands and gravels. The cohesive deposits are likely to have a low permeability whilst the underlying granular deposits can be considered to have a moderate to high permeability. The drift deposits are designated as a Secondary Aquifer – Undifferentiated by the Environment Agency.

The published geology indicates the site is underlain by variable solid geology, with the Whitehaven Sandstone Group, Eskett Limestone and Middle Coal Measures all present, generally designated as a Secondary Aquifer – A by the Environment Agency. Rockhead was proven in the intrusive investigation between 7.30-18.00mbgl.

The nearest surface water feature is the culverted Nor Beck immediately west of the wider site.

With respect to contamination, some limited leachate contamination was recorded within the made ground for metals/inorganics however these exceedances were within the made ground, perched atop low permeability clays.

Due to the generally low contamination found across the site, the aquifer designations beneath the site, and the distance to surface waters, the development is considered to represent a low risk to groundwater or surface water receptors.

6.5 Construction Materials

Materials at risk from potential soil contamination include inorganic matrices such as cement and concrete and also organic material; e.g. plastics and rubbers. Acid ground conditions and elevated levels of sulphates can accelerate the corrosion of building materials. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum-based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

6.5.1 Concrete Classification

BRE Special Digest One: *Concrete in Aggressive Ground*: 2005 3rd Edition has been used to assess the risks posed to underground concrete and to establish the design measures required to mitigate the risks. The results of the pH and water-soluble sulphate tests (when converted to total potential sulphate) based on the Solmek testing to date fall into Class DS-3 ACEC (Class AC-3) requirements for concrete protection. This assumes mobile groundwater conditions.

The slag deposits should be considered separately however. The WYG report outlined DS-1 AC-1 for all deposits other than slag, and a classification of DS-4 AC-4 for the slag itself.

6.5.2 Water Supply Pipes Material Selection

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication *Guidance for the selection of Water Supply Pipes to be used in Brownfield*

Sites (January 2011). A Brownfield Site is defined in the document as “Land or premises that have previously been used or developed that may be vacant or derelict”. It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer.

Level of acidic to alkaline pH (9.0 to 10.6) were recorded across the site at depths of between 0.00mbgl and 0.90mbgl within the made ground and natural samples.

The concentrations of the selected determinants should be compared to the pipe material selection table in Appendix E, and consultation with the appropriate utility supply company is required to identify the most suitable service fabric. However, the pH levels preclude the use of copper pipes whilst TPH levels locally preclude polyethylene.

6.6 Unexpected Contamination

If during the initial site strip or subsequent ongoing construction activities, any zones of odorous, brightly coloured or suspected contaminated ground are encountered, then the following procedure should be followed:

- Stop work in the affected area
- Contact Solmek and provide pictures of the affected area
- Solmek can visit site to investigate the material and provide guidance
- If required – Solmek can sample and test the material
- Once test results are returned, this will determine whether or not remediation will be required

6.7 Waste Classification and WAC Testing

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste* (2015). This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

For this project, Waste Classification has been undertaken on the 13no samples, using HazwasteOnline. The findings of the Waste Classification indicate that the 13no samples can be considered as Non Hazardous Waste (17 05 04). The historic WYG report undertake waste classification on six samples, with five being classified as Non-Hazardous and 1no being classified as Hazardous (WS105 0.10m) with hazard properties HP7 (carcinogenic) and HP11 (mutagenic) due to elevated TPH. WS105 is not located in an area being proposed for redevelopment within either the BOC Yard or the Hub Building, therefore based on the available testing, material from these areas can generally be considered as Non-Hazardous.

Waste Acceptance Criteria testing was also undertaken on two samples from across the site which are considered to represent the two made ground strata encountered. The findings of the Waste Classification and WAC Testing is summarised below in Table 3:

In general the non hazardous made ground is unlikely to be acceptable at an inert landfill due to elevated organic content and fluoride. The one sample of hazardous waste may need to be treated prior to disposal at a hazardous landfill due to the concentrations of TPH.

TABLE 7: SUMMARY OF WASTE CLASSIFICATION AND WAC TESTING

Sample	Material	HazWasteOnline Classification	WAC Test?	Comments on WAC results
TP01, 0.10-0.20m	Made ground – Topsoil	Non-Hazardous	Yes	TOC & Fluoride exceed relevant landfill threshold
TP05, 0.00-0.10m		Non-Hazardous	No	N/A
TP10, 0.00-0.10m*		Non-Hazardous	No	
TP12, 0.10m*		Non-Hazardous	No	
TP13, 0.00-0.10m		Non-Hazardous	Yes	TOC & LOI exceed relevant landfill threshold
WS105, 0.10m*		Hazardous	Yes	TOC & LOI exceed relevant landfill threshold
TP03, 0.50-0.60m	Made ground – Slag	Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
TP04, 0.20-0.30m		Non-Hazardous	No	N/A
TP14, 0.20m		Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
WS106, 0.40m		Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
CP103, 0.50m*		Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
TP02, 0.20-0.30m	Made ground – granular	Non-Hazardous	No	N/A
TP06, 0.40-0.60m*		Non-Hazardous	No	
TP07, 0.80-0.90m*		Non-Hazardous	No	
TP15, 0.10-0.20m		Non-Hazardous	No	
CP101, 0.50m		Non-Hazardous	Yes	No exceedances of relevant landfill threshold
RBH103, 0.50m*		Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
TP16, 0.30m	Made ground – cohesive	Non-Hazardous	Yes	No exceedances of relevant landfill threshold
WS103, 0.60m*		Non-Hazardous	Yes	Fluoride exceeds relevant landfill threshold
italics denotes WYG sample				
*denotes sample from outside proposed Yard/Hub building areas				

The waste classification should be confirmed with the individual landfill accepting the waste prior to disposal. These test results should not be regarded as being representative of materials on site for landfill export purposes since preparatory and excavation works often result in mixing of different types of materials. In addition, further testing of individual stockpiles, including asbestos quantification, is recommended prior to transport to landfill sites.

It should be noted that the above conclusions relate to the specific samples tested during this investigation, and therefore, material excavated during any future re-development will not necessarily have the same classification. It is recommended that waste materials varying from the samples tested and intended to be removed from site are tested individually to determine the classification of the waste.

The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

7 GROUND GAS ASSESSMENT

The proposed development includes the construction of a storage yard in the west and a new hub building in the northeast.

Ground gases such as carbon dioxide (CO₂), methane (CH₄), carbon monoxide (CO) and volatile organic compounds (VOCs) can be classed as a form of contamination where there is a potential risk to human health.

With respect to the historic gas monitoring, six visits were undertaken by WYG to fifteen monitoring pipes between August and November 2020.

Minimum oxygen levels ranged from 0.1 to 19.8%, with maximum CO₂ levels ranging from <0.1 to 2.6% and maximum methane levels ranging from 0.3 to 0.5%. PID levels ranged from <0.1 to 1.4ppm, CO ranged from <1 to 10ppm and H₂S was not recorded (<0.1ppm).

WYG recommended a classification of Characteristic Situation 2 for the site.

For this report, the yard is not considered to be at risk from ground gases as there are no enclosed structures, however there may be a risk to the hub building.

Further gas monitoring will therefore be undertaken via measuring emissions from two standpipes (BH07 & BH08) that were installed during the sitework. The gas monitoring will consist of four visits over a period of one month. The gas monitoring results will be presented as an addendum to this report.

8 GEOTECHNICAL TESTING AND ANALYSIS

Samples taken from the boreholes and trial pits underwent a series of geotechnical tests (BS 1377:1990) to aid foundation design and soil description. In addition, insitu Standard Penetration Tests (SPTs) and California Bearing Ratio Tests were undertaken at regular intervals during drilling. The geotechnical results are presented in Appendix D.

8.1 Strength and Density

8.1.1 SPT N Values

Standard Penetration Tests undertaken within the made ground deposits all yielded N values of 50+ (refusal).

Standard Penetration Tests undertaken within the natural cohesive deposits yielded N values of between 8 and 24, with these results indicating medium to high strength deposits.

Standard Penetration Tests undertaken within the natural granular deposits at 1.20mbgl yielded N values of generally between 28 and 50+, indicative of loose to medium dense deposits. Locally a result of 9 (loose) was recorded within BH09 at 6.00mbgl.

SPTs upon rockhead yielded N values of 50+ (refusal).

8.1.2 Hand Shear Vanes

A hand shear vane test within the cohesive made ground of TP16 returned a result of 62kPa, indicating medium strengths.

8.2 Rock Uniaxial Compressive Strength (UCS) Tests

A series of five rock core samples were subjected to UCS testing, ranging in depth from 12.30mbgl to 17.00mbgl.

All of the samples exhibited a 'brittle' failure mode and produced UCS results between 12.2 and 23.5MPa.

8.3 Point Load Testing

Five samples of rock core were sent for Point Load Testing (both axial and diametral) to provide an indication of the strength of the rock. The corrected results ranged between 0.07 and 3.14Is(50)MPa.

8.4 Moisture Contents

Four natural samples were tested for moisture content, with the results ranging from 9.2 to 18%.

8.5 Slag Expansion Testing

Slag testing within the WYG report on six samples indicated that generally the slag tested was not the more expansive types of slag, with only a modest potential for future expansion (0.18% volumetric expansion recorded in tests). Despite this, it will be necessary to adopt some precautions relating to slag in the construction of the proposed yard and building, discussed further in Section 8.10.

8.6 pH and Sulphate Results

Four natural soil samples and three natural rock samples from the boreholes were tested for acidity and soluble sulphate content to assess whether the material may be potentially aggressive to building fabric. The results of the testing for pH ranged from 8.0 to 10.0 indicating slightly alkaline conditions. Soluble sulphates were recorded at levels ranging from <10mg/l to 490mg/l.

8.7 CBR Tests

CBR testing was undertaken across the site. The in-situ CBR results are detailed below in Table 8.

TABLE 8: SUMMARY OF CBR TESTING RESULTS

Trial Pit	0.30mbgl result (%)	0.60mbgl result (%)
TP01	-	15 (0.50m M/G)
TP02	15 (M/G)	-
TP03	-	15 (M/G)
TP04	15 (M/G)	-
TP05	15 (0.10m M/G)	-
TP06	4.0 (M/G)	6.0 (M/G)
TP07	3.0 (M/G)	4.0 (M/G)
TP08	15 (0.35m M/G)	-
TP09	15 (M/G)	-
TP10	15 (0.20m M/G)	-
TP11	15 (M/G)	-
TP12	15 (0.20m M/G)	-
TP13	15 (M/G)	-
TP14	15 (0.10m M/G)	-
TP15	4.0 (M/G)	15 (M/G)
TP16	3.0 (M/G)	4.5 (M/G)
M/G denotes test within Made Ground: an equilibrium CBR of 2% should be adopted		

8.8 Mining Assessment

8.8.1 Summary of Historic Works

For this site, the WYG Phase 1 Desk Study indicated that the west of the site was within a Development High Risk Area with relation to coal. There were understood to be three coal seams worked beneath the site and eight mine entries on or within 20m of the site. Inspection of Geological Mapping indicates that the White Metal Coal (WMT), Slaty (SLTY) and Main Band Coal (CUMN) Seams subcrop beneath the site, whilst the Black Metal Coal (BMT) subcrops northwest of the site.

With respect to ironstone mining, a band of iron ore within the sandstone in the east and south of the site may have also been worked. It was noted that two shafts were sunk off-site for the extraction of ironstone.

The WYG Phase 2 Site Investigation included 6no rotary cored boreholes to max.40.95mbgl and 7no rotary openhole boreholes to max 41.35mbgl. The drilling encountered a coal seam within the Whitehaven Sandstone, with further seams encountered locally within the Coal Measures area of the site. There was no voids or workings encountered by WYG.

With respect to the mine shafts, there are eight shafts present on the wider site, however only two of these are considered relevant to the development proposals considered in this report, with 301515-006 & 301515-008 located either side of the proposed BOC yard in the west of the site. WYG commissioned Terradat to undertake geophysical survey of four of the eight shafts on the wider site, including 301515-006. It was not possible to investigate 301515-008 due to this area being overgrown. 301515-006 was investigated via magnetics, electromagnetic ground conductivity and gravity methods. An anomaly was noted at 301376.9, 515624.8 (named A2) that was considered unlikely to relate directly to a shaft due to the thickness of made ground in the survey area, however this low-density feature may relate to the upward crowning of a void.

WYG concluded that mine workings were not considered to pose a significant risk however mine shafts may pose a risk and further drilling may be required based on building layouts.

8.8.2 Further Works – Mine Workings

The Solmek Site Investigation consisted of an additional 9no boreholes. Two of these were (BH01 & BH02) to investigate the area proposed for the BOC Yard whilst three were drilled to investigate the area of the proposed BOC Hub Building (BH07-09). The remaining boreholes were drilled to provide additional coverage of areas of the site considered for future development. Figure 4 illustrates the location of the 9no additional boreholes, overlain onto a Geological map.

The ten times seam thickness rule states that where competent rock exceeds ten times the extracted seam thickness then no major crown holing should occur at the surface (Structural Foundations Manual; M. F. Atkinson, *Spon Press* 2003). If the competent rock cover is less than ten times the extracted seam thickness, then recommendations suggest the workings must be grouted using a mixture of pulverised fuel ash (PFA) and cement placed into the area under pressure. For a transition zone of 6-10 times the seam thickness, it may be acceptable to consider the use of raft foundations subject to approval from the regulatory authorities. However, the use of 6 to 10 times the seam thickness is not appropriate for steeply dipping seams and where strong flowing water is encountered.

Similarly to the WYG investigation, no voids/workings were encountered however, intact coal seams were noted locally. This results in a total of 22no rotary boreholes across the site, none of which noted voids/workings.

The two boreholes drilled in the vicinity of the proposed yard in the west of the site encountered a shallow coal seam which, if worked would pose a risk to development in this area. In view of the fact that this area is to be developed with a yard only, then the risk from shallow mineworkings is considered to be low however, if the yard is considered sensitive to differential settlement further proof drilling and grouting may be necessary. Similarly if further structures are proposed in the approximate western two thirds of the site, then proof drilling and possible grouting would be required dependent on the development layout.

In the area of the currently proposed building in the northeast of the development site three boreholes were drilled during this investigation and one during the previous WYG investigation. No evidence of mine workings or significant shallow coal seams were identified.

8.8.3 Further Works – Mine Entries

Of the eight shafts present on the wider site, there are just two which may impact the proposed development, with shafts 301515-006 & 301515-008 located either side of the proposed BOC yard.

GPR previously encountered an anomaly near to 301515-006 however a GPR survey was not possible or 301515-008. Slit trenching was undertaken across the areas of each of these shafts. Anecdotal evidence suggests that the slag across the site was deposited after the shafts were sunk, therefore a significant thickness of slag is anticipated to overlay the areas of the shafts, however the slit trenches were excavated

to examine for possible signs of disturbance/movement at the surface of the slag, which may indicate the presence of a crowning feature.

Diagrams for each slit trench and generalised logs of the ground conditions in each area are provided in Appendix B. Generally, the same competent fused slag was encountered across the area of each slag, with no signs of disturbance. A small area located 6m north of the centre of 301515-008 encountered a small (<1m diameter) area where gravelly clay was present beneath the topsoil rather than slag, however competent fused slag was then encountered at 0.50mbgl.

BHs 01 & 02 were drilled in the area of the proposed shafts, and recorded slag to between 9.70 and 10.20mbgl, respectively. This corroborates with the findings of the WYG report which also recorded deep slag in this area (up to 8.80m). It is understood that the slag was deposited some time after the shafts were sunk, with historic maps and anecdotal evidence suggesting this was done by the 1960s.

It is understood that the proposed yard will be very lightly loaded, utilised simply for the storage of gas bottles/canisters, IBCs and forklifts.

Given that neither shaft directly underlies the proposed yard, and rather each is to the edge of the yard, and also considering the nature of the proposals, it is considered that the proposed yard can be safely developed based on the available information.

The slag encountered is fused and highly competent. Should the surface topsoil/shallow loose fill be removed and replaced with a reinforced soil mattress, the yard could then be constructed atop this. It would be recommended to adopt reinforcement within the concrete hardstanding yard (450mm thick). Given the approximate size of the proposed yard, this would then effectively span a wide enough area that increased loadings on the shafts themselves would be negligible.

Should development proposals change, and buildings be proposed in the area of the shafts, further investigation may be necessary to determine the risks to new development.

8.9 Preliminary Ground Model

The information gathered during the intrusive works has been collated and summarised in the below preliminary ground model. The below model will be revised and updated following the publication of the geotechnical results.

TABLE 9: PRELIMINARY GROUND MODEL

Strata	Depth (mbgl)		Parameters Range (average)	Reference
	From	To		
Made Ground	0.00	1.30-10.20	CBR = 3-15% (11.2)	In-situ CBR test
			N = 50+ (50+)	In-situ SPT
			pH = 9-10.6 (9.8)	Laboratory Testing
			SO ₄ = 44-2200 (920)	
			Moisture = 4.6-27% (15.2)	
Sandy Gravelly CLAYS	1.30-10.20	5.70-11.90	N = 8-16 (13.1)	In-situ SPT
			pH = 8.2-8.4 (8.3)	Laboratory Testing
			SO ₄ = 74-170 (122)	
			Moisture = 12-18% (15)	
SANDS & GRAVELS	5.70-9.10	7.10-18.00	N = 28-50 (38)	In-situ SPT
			pH = 8.6-10.0 (9.3)	Laboratory Testing
			SO ₄ = 33-490 (261.5)	

Whitehaven Sandstone Formation (BH04, BH07 & BH09)	7.30-18.00	>40.00mbgl	Moisture = 9.2-11% (10.1)	
			Is(50)MPa = 0.07-3.14 (1.13)	Point Load Testing
			MPa = 12.2-23.5 (16.5)	UCS Testing
			pH = 8.0-8.3 (8.2)	Laboratory Testing
			SO ₄ = <10-12 (11)	

8.10 Foundations

Two developments are proposed for this site, comprising a storage yard in the west and a new hub building in the southeast. Foundation solutions are discussed below. It is also noted that the below may be revised once geotechnical results are available.

8.10.1 Proposed BOC Storage Yard

For the proposed storage yard, given the CBRs encountered in the fused slag, it is recommended to strip the shallow topsoil/loose made ground and replaced this with imported granular material reinforced with a geogrid, laid down and compacted in accordance with the *Specification for Highway Works Series 600* in 150mm layers, this will yield a CBR in excess of 15%, meaning capping is not necessary and the storage yard can be constructed directly atop this.

It is recommended to reinforce the full extent of the yard as a conservative measure to mitigate against the adjacent shafts (as discussed in Section 8.8.3).

8.10.2 Proposed BOC Hub Building – Piled Foundations

In the area of the proposed building, variable made ground depths were encountered, ranging from 2.80mbgl in BH08 to 7.10mbgl in BH07. It is therefore considered to adopt piled foundations.

Information provided in this report should be made available to a competent piling contractor who can design appropriate foundations in accordance with Section 7: Pile foundations of BS EN 1997 – 1:2004 which applies to end-bearing piles, friction piles, tension piles and transversely loaded piles installed by driving, by jacking, and by screwing or boring. The piling contractor will need to take into consideration the possible effects of negative skin friction from made ground deposits, as well as issues from heave and horizontal loading due to expansion of the slag materials. Allowance should also be made for breaking through known and unknown buried obstructions.

To mitigate the risks posed from the expansive slag material, it may be necessary to sleeve the piles through the slag, with the annulus between the sleeve and the pile being filled with a compressible material (e.g. bentonite) to reduce the risk of expansion loads impacting the pile itself.

The above comments however are advisory, and the precise method of pile installation and the applicability of proprietary systems, diameters and depths required would need to be determined by a specialist piling contractor.

8.10.3 Pavements/Hardstanding

Should new hardstanding be proposed, given the slag present at shallow depth, it would be recommended to further excavate to a suitable level and replace this with inert engineered fill. Consideration should also be given to flexible pavement materials.

8.10.4 Utility Connections

Given the widespread presence of slag across the site, proposed utilities should be designed to mitigate risks from ground movement (heave). Flexible connections should be utilised.

8.10.5 General Foundation Comments

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with

suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Solmek if unexpected ground conditions are encountered during redevelopment.

8.11 Excavation

Based on the nature of the ground conditions encountered, excavations should be within the capacity of normal earthworks plant although breaking out of relic foundations, surface concrete and other obstructions should be anticipated. Stability of excavations will be poor in the made ground but should improve in the natural clay (at depth). Excavation sides should be designed, constructed and supported in accordance with the recommendations given in CIRIA Report No. 97: *Trenching Practice*.

8.12 Groundwater

Perched groundwater was noted within TP06 at 0.40mbgl with groundwater strikes noted within the boreholes between 4.70 and 17.10mbgl.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels significantly higher than those found during this investigation may be encountered.

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APPENDIX A: Figures and Drawings



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Site Location Plan

Project Number

S220141

Project Name

Site A, Leconfield, Cleator Moor

Client

Copeland Borough Council

Date

March 2022

DRG Number

Figure 1

Scale

1:5000 @ A4 [DO NOT SCALE]

Legend Key

 Project Bounds - Project Bounds



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Exploratory Hole Location Plan

Project Number

S220141

Project Name

Site A, Leconfield, Cleator Moor

Client

Copeland Borough Council

Date

March 2022

DRG Number

Figure 2

Scale

1:3000 @ A4 [DO NOT SCALE]

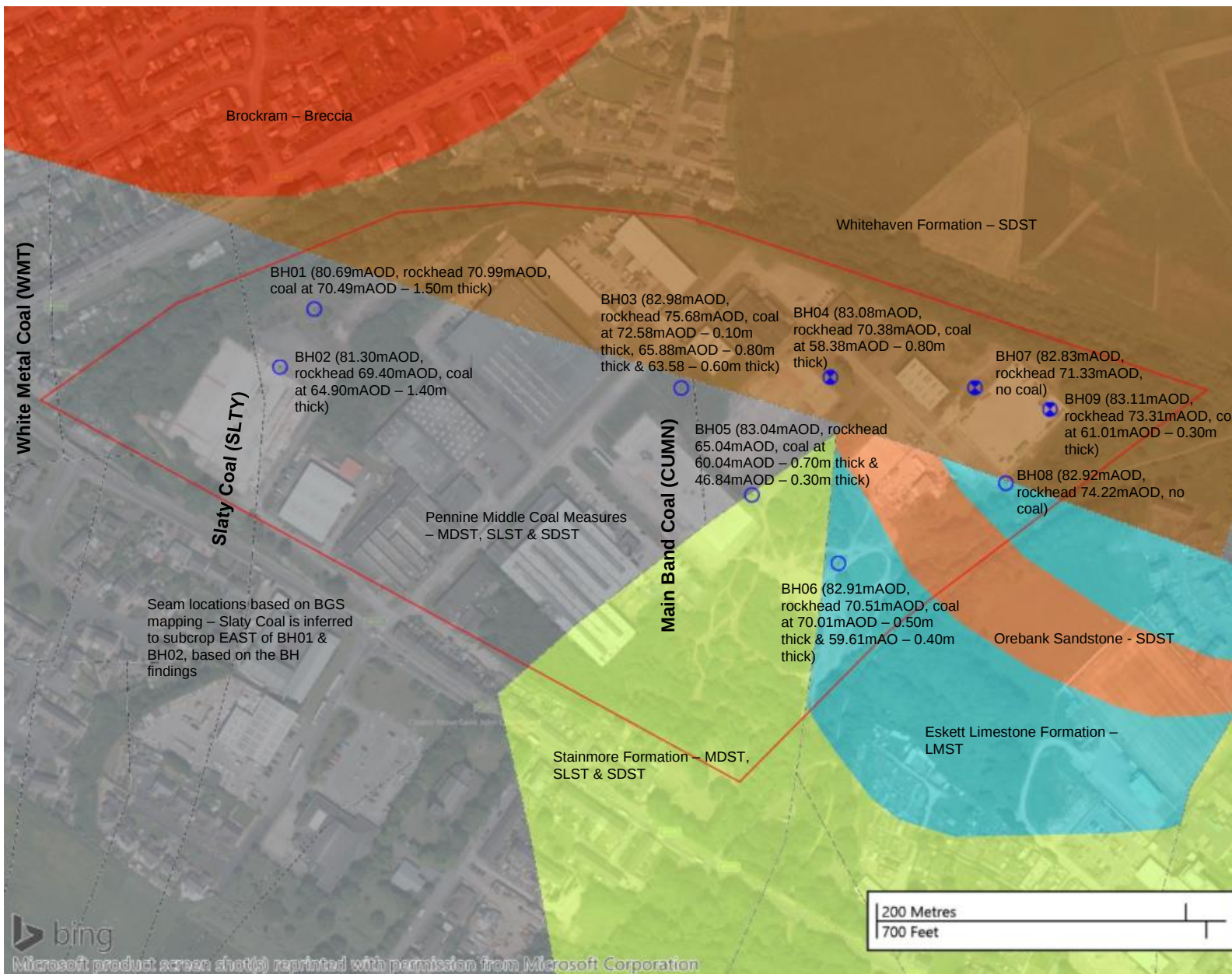
Legend Key

- Locations By Type - Empty
- ⊕ Locations By Type - CP+RC
- Locations By Type - RO
- ⊕ Locations By Type - SCP
- ⊕ Locations By Type - TP
- ▭ Project Bounds - Project Bounds



Contains Maps® Imagery ©Google 2022

Title
Development Location Plan
Project
Site A, Leconfield Industrial Estate, Cleator Moor
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 3
Scale
Do not Scale
Key
Approx. Area of Proposed Yard Approx. Area of Proposed Building
 N Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: south@solmek.com www.solmek.com
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Title
Mining Geology Plan
Project
Site A, Leconfield Industrial Estate, Cleator Moor
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 4
Scale
Do not Scale
Key
 Approx. Location of Rotary Openhole BH
 Approx. Location of Rotary Cored BH with Openhole follow-on
 Coal Outcrop
 N

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[illegible]



Figure 7: BH07 12.00-15.00m



Figure 8: BH07 15.00-18.00m

Title
Core Photographs
Project
Site A, Leconfield Industrial Estate, Cleator Moor
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figures 7 & 8
Scale

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Figure 11: Area of slit trenching around Shaft 006.



Figure 12: Area of slit trenching around Shaft 006.

Title	Date
Figures 11 & 12	March 2022
Project	
Site A, Leconfield Industrial Estate, Cleator Moor	
Client	
Copeland Borough Council	

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Figure 13: Area of slit trenching around Shaft 008.



Figure 14: Area of slit trenching around Shaft 008.

Title	Date
Figures 13 & 14	March 2022
Project	
Site A, Leconfield Industrial Estate, Cleator Moor	
Client	
Copeland Borough Council	

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Title
TP01- Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 15
Scale
Do Not Scale
Key
Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: om www.solmek.com




Title
TP02 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 16
Scale
Do Not Scale
Key
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Title
TP03- Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 17
Scale
Do Not Scale
Key
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Title
TP04 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 18
Scale
Do Not Scale
Key
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Title
TP05 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 19
Scale
Do Not Scale
Key
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Title
TP06 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 20
Scale
Do Not Scale
Key
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Title
TP07 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 21
Scale
Do Not Scale
Key
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Title
TP08 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 22
Scale
Do Not Scale
Key
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Title
TP09 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 23
Scale
Do Not Scale
Key
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Title
TP10 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 24
Scale
Do Not Scale
Key
Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: om www.solmek.com




Title
TP11 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 25
Scale
Do Not Scale
Key
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Title
TP12 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 26
Scale
Do Not Scale
Key
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Title
TP13 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 27
Scale
Do Not Scale
Key
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Title
TP14 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 28
Scale
Do Not Scale
Key
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Title
TP15 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 29
Scale
Do Not Scale
Key
Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: om www.solmek.com




Title
TP16 - Pit and Spoil Photos.
Project
Site A, Leconfield
Client
Copeland Borough Council
Date
March 2022
Fig No.
Figure 30
Scale
Do Not Scale
Key
Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: om www.solmek.com


APPENDIX B:
Borehole Logs & Trial Pit Logs



TrialPit No
TP01
Sheet 1 of 1

Date
16/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10 - 0.20	B+ES	15%	0.20			MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.
	0.30 - 0.40	B+ES		0.40			MADE GROUND: Brown slightly sandy gravel of low cobble content. Gravel is fine to coarse subangular to angular of brick, wood, slag and metal. Occasional cobbles of slag up to 30cm.
	0.50	CBR		0.50			MADE GROUND: Grey blue fused slag recovered as gravel. Gravel is medium to coarse angular of slag. End of Pit at 0.500m

Stability: Pit walls stable



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Trial Pit Log

Trial Pit No
TP02
Sheet 1 of 1

Project Name: Site A, Leconfield, Cleator Moor
Project No. S220141
Co-ords: 301372E - 515606N
Level:
Date 16/02/2022

Plant Used: JCB 3CX
Dimensions (m): 1.80
Depth 0.30
Scale 1:26
Logged KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20 - 0.30	B+ES		0.10			MADE GROUND: Grass over orangey brown slightly clayey very gravelly topsoil. Gravel is coarse angular of plastic, brick and sandstone.
	0.30	CBR	15%	0.30			MADE GROUND: Brown slightly sandy gravel of low cobble content. Gravel is fine to coarse subangular to angular of brick, wood, slag and metal. Occasional cobbles of slag up to 30cm. Greyish blue fused slag obstruction - unable to excavate through.
							End of Pit at 0.300m
							1
							2
							3
							4
							5

Remarks: No groundwater encountered.
Unable to excavate through slag.
Sulphurous odour noted within slag.

Stability: Pit walls stable

Trial Pit Log

TrialPit No
TP03
Sheet 1 of 1

Project Name: Site A, Leconfield, Cleator Moor

Project No.
S220141

Co-ords: 301406E - 515607N
Level:

Date
16/02/2022

Plant Used:	JCB 3CX
-------------	---------

Dimensions
(m):

1 00

Scale
1:26

Client: Copeland Borough Council

Depth
0.70

1.10

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10 - 0.20	B+ES	15%	0.20			MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.	0.70 RW
	0.20 - 0.30	B+ES					MADE GROUND: Soft consistency brown black slightly sandy very gravelly clay of low cobble and boulder content. Gravel is fine to medium subangular to angular of slag. Cobbles/boulders of angular to subangular slag.	
	0.50 - 0.60	B+ES					MADE GROUND: Grey blue fused slag recovered as gravel. Gravel is medium to coarse angular of slag.	
	0.60	CBR						
								1 -
								2 -
								3 -
								4 -
								5 -

Remarks:	Surface water run off. Unable to excavate through slag. Sulphurous odour noted within slag.
----------	---

Stability: Pit walls stable



TrialPit No
TP04
Sheet 1 of 1

Date
16/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.00 - 0.20	B+ES	15%				MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.
	0.20 - 0.30	B+ES		0.20			MADE GROUND: Grey blue fused slag recovered as gravel. Gravel is medium to coarse angular of slag.
	0.30	CBR		0.30			End of Pit at 0.300m

Stability: Pit walls stable

Trial Pit Log

TrialPit No
TP05
Sheet 1 of 1

Project Name:	Site A, Leconfield, Cleator Moor
---------------	----------------------------------

Project No.
S220141

Co-ords: 301426E - 515613N
Level:

Date
16/02/2022

Plant Used:	JCB 3CX
-------------	---------

Dimensions
(m):

0.80

Scale
1:26

Client: Copeland Borough Council

Depth
0.10

0.60

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.00 - 0.10 0.10	B+ES CBR	15%	0.10			MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag. Greyish blue fused slag obstruction - unable to excavate through. End of Pit at 0.100m	

Remarks:	Surface water run off. Unable to excavate through slag. Sulphurous odour noted within slag.
----------	---

Stability: Pit walls stable

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No TP06 Sheet 1 of 1	
Project Name: Site A, Leconfield, Cleator Moor				Project No. S220141		Co-ords: 301633E - 515544N Level:		Date 15/02/2022	
Plant Used: JCB 3CX				Dimensions (m): Depth 0.70 1.30				Scale 1:26	
Client: Copeland Borough Council				Depth 0.80				Logged KW	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼	0.10 - 0.20	B+ES	4.0%	0.20			MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.		
	0.30	CBR					MADE GROUND: Black/brown slightly sandy gravel. Sand is medium to coarse. Gravel is coarse and angular of brick, slag, ash, clinker and metal. Very strong sulphurous odour noted.		
	0.40 - 0.60	B+ES							
	0.60	CBR	6.0%	0.80			Greyish blue fused slag obstruction - unable to excavate through.		
	0.70 - 0.80	B+ES					End of Pit at 0.800m		
1 2 3 4 5									
Remarks: Groundwater seepage at 0.40m. Unable to excavate through slag. Sulphurous odour noted within slag.									
Stability: Pit walls stable									



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Trial Pit Log

Trial Pit No
TP07
Sheet 1 of 1

Project Name: Site A, Leconfield, Cleator Moor
Project No. S220141
Co-ords: 301650E - 515511N
Level: 15/02/2022

Plant Used: JCB 3CX
Dimensions (m): 1.00
Depth 1.10
Scale 1:26
Logged KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.30	CBR	3.0%	0.10			MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.
	0.50 - 0.60	B+ES					MADE GROUND: Firm consistency dark brown slightly sandy very gravelly clay of low cobble content. Gravel is medium to coarse subrounded to angular of brick, wood, slag and clinker. Occasional rounded cobbles of sandstone up to 30cm.
	0.60	CBR	4.0%				
	0.80 - 0.90	B+ES		0.70			MADE GROUND: Fused slag recovered as multicoloured gravel. Gravel is medium to coarse angular of slag, ash and clinker.
				1.10			End of Pit at 1.100m

Remarks: No groundwater encountered.
Unable to excavate through slag.
Sulphurous odour noted within slag.

Stability: Pit walls stable



TrialPit No
TP08
Sheet 1 of 1

Date
16/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	B+ES	15%	0.05			MADE GROUND: Block paving.	
	0.20 - 0.30	B+ES		MADE GROUND: Orange coarse paving sand.				
	0.35	CBR		MADE GROUND: Orange/pink very sandy gravel. Gravel is medium to coarse subangular to angular of brick and slag.				
				0.35			End of Pit at 0.350m	

Stability: Pit walls stable

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No TP09 Sheet 1 of 1	
Project Name: Site A, Leconfield, Cleator Moor				Project No. S220141		Co-ords: 301687E - 515545N Level:		Date 17/02/2022	
Plant Used: JCB 3CX				Dimensions (m): Depth 0.30		1.10 		Scale 1:26 Logged KW	
Client: Copeland Borough Council									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20 - 0.30	B+ES	15%	0.15			MADE GROUND: Concrete with rebar overlaying plastic membrane.		
	0.30	CBR				MADE GROUND: Grey/pink very sandy gravel. Gravel is medium to coarse angular of dolomite and brick.			
						Greyish blue fused slag obstruction - unable to excavate through.			
						End of Pit at 0.300m			
							1		
							2		
							3		
							4		
							5		
Remarks: No groundwater encountered. Unable to excavate through slag. Sulphurous odour noted within slag.									
Stability: Pit walls stable									



TrialPit No
TP10
Sheet 1 of 1

Date
17/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.00 - 0.10	B+ES	15%	0.20			MADE GROUND: Grass over light brown slightly sandy very gravelly topsoil. Gravel is fine angular of sandstone and shale.
	0.20	CBR					Greyish blue fused slag obstruction - unable to excavate through. End of Pit at 0.200m

Stability: Pit walls stable

Trial Pit Log

TrialPit No
TP11
Sheet 1 of 1

Project Name:	Site A, Leconfield, Cleator Moor
---------------	----------------------------------

Project No.
S220141

Co-ords: 301747E - 515450N
Level:

Date
17/02/2022

Plant Used:	JCB 3CX
-------------	---------

Dimensions
(m):

0 60

Scale
1:26

Client: Copeland Borough Council

Depth
0.30

0.60

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	B+ES	15%	0.30			MADE GROUND: Grass over light brown very gravelly topsoil. Gravel is fine to medium angular of sandstone, shale and slag.	
	0.20	B+ES					Greyish blue fused slag obstruction - unable to excavate through.	
	0.30	CBR					End of Pit at 0.300m	

Remarks:	No groundwater encountered. Unable to excavate through slag. Sulphurous odour noted within slag.
----------	--

Stability: Pit walls stable

Trial Pit Log

TrialPit No
TP12
Sheet 1 of 1

Project Name:	Site A, Leconfield, Cleator Moor
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Project No.
S220141

Co-ords: 301758E - 515480N
Level:

Date
17/02/2022

Plant Used:	JCB 3CX
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Dimensions
(m):

0.50

Scale
1:26

Client: Copeland Borough Council

Depth
0.20

0.60

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	B+ES	15%	0.20			MADE GROUND: Grass over light brown slightly clayey very gravelly topsoil. Gravel is fine to medium subangular to angular of sandstone, slag and shale.	
	0.20	CBR					Greyish blue fused slag obstruction - unable to excavate through.	
						End of Pit at 0.200m		

Remarks:	No groundwater encountered. Unable to excavate through slag. Sulphurous odour noted within slag.
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Stability: Pit walls stable



TrialPit No
TP13
Sheet 1 of 1

Date
17/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.00 - 0.10	B+ES	15%				MADE GROUND: Grass over dark brown slightly sandy very gravelly topsoil. Gravel is fine to coarse angular to subangular of brick and slag.
	0.20	B+ES		0.20			MADE GROUND: Fused slag recovered as grey/blue medium to coarse subangular to angular gravel.
	0.30	CBR		0.30			End of Pit at 0.300m

Stability: Pit walls stable



TrialPit No
TP14
Sheet 1 of 1

Date
17/02/2022

Scale
1:26

Logged
KW

[illegible]

Stability: Pit walls stable

Trial Pit Log

TrialPit No
TP15
Sheet 1 of 1

Project Name: Site A, Leconfield, Cleator Moor

Project No.
S220141

Co-ords: 301870E - 515564N
Level:

Date
18/02/2022

Plant Used:	JCB 3CX
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Dimensions
(m):

0.70

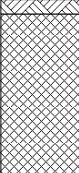
Scale
1:26

Client: Copeland Borough Council

Depth
0.60

0.60

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10 - 0.20	B+ES	4.0%	0.05			MADE GROUND: Grass over brown very sandy topsoil. MADE GROUND: Black slightly sandy gravel. Gravel is coarse and angular of clinker and slag.
	0.30	CBR					
	0.40 - 0.50	B+ES					
	0.60	CBR	15%	0.60		Greyish blue fused slag obstruction - unable to excavate through. End of Pit at 0.600m	

Remarks:	No groundwater encountered. Unable to excavate through slag. Sulphurous odour noted within slag.
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Stability: Pit walls stable



SOLMEK

Solmek Ltd
12-16 Yarm Road
Stockton on Tees
TS18 3NA
Tel: 01642 607083
Email: info@solmek.com

Trial Pit Log

Trial Pit No
TP16
Sheet 1 of 1

Project Name: Site A, Leconfield, Cleator Moor
Project No. S220141
Co-ords: 301862E - 515528N
Level:
Date 18/02/2022

Plant Used: JCB 3CX
Dimensions (m): 0.90
Scale 1:26

Client: Copeland Borough Council
Depth 0.70
Logged KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05			MADE GROUND: Grass over dark brown slightly gravelly topsoil. Gravel is fine to medium subangular to angular of sandstone and shale.
	0.30	B+ES					MADE GROUND: Firm consistency red/brown slightly sandy very gravelly clay of low cobble content. Gravel is fine to medium subrounded to angular of sandstone, shale and slag. Cobbles of full red bricks.
	0.30	CBR	3.0%				
	0.50	HV	62kPa				
	0.60	B+ES					
	0.60	CBR	4.5%	0.70			Greyish blue fused slag obstruction - unable to excavate through.
							End of Pit at 0.700m

Remarks: No groundwater encountered.
Unable to excavate through slag.
Sulphurous odour noted within slag.

Stability: Pit walls stable



TrialPit No
SHAFT-006
Sheet 1 of 1

Date
15/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			MADE GROUND: Grass over slightly gravelly slightly clayey topsoil. Gravel is subangular to subrounded fine to medium of sandstone, mudstone and slag.
							Greyish blue fused slag obstruction - unable to excavate through. End of Pit at 0.300m

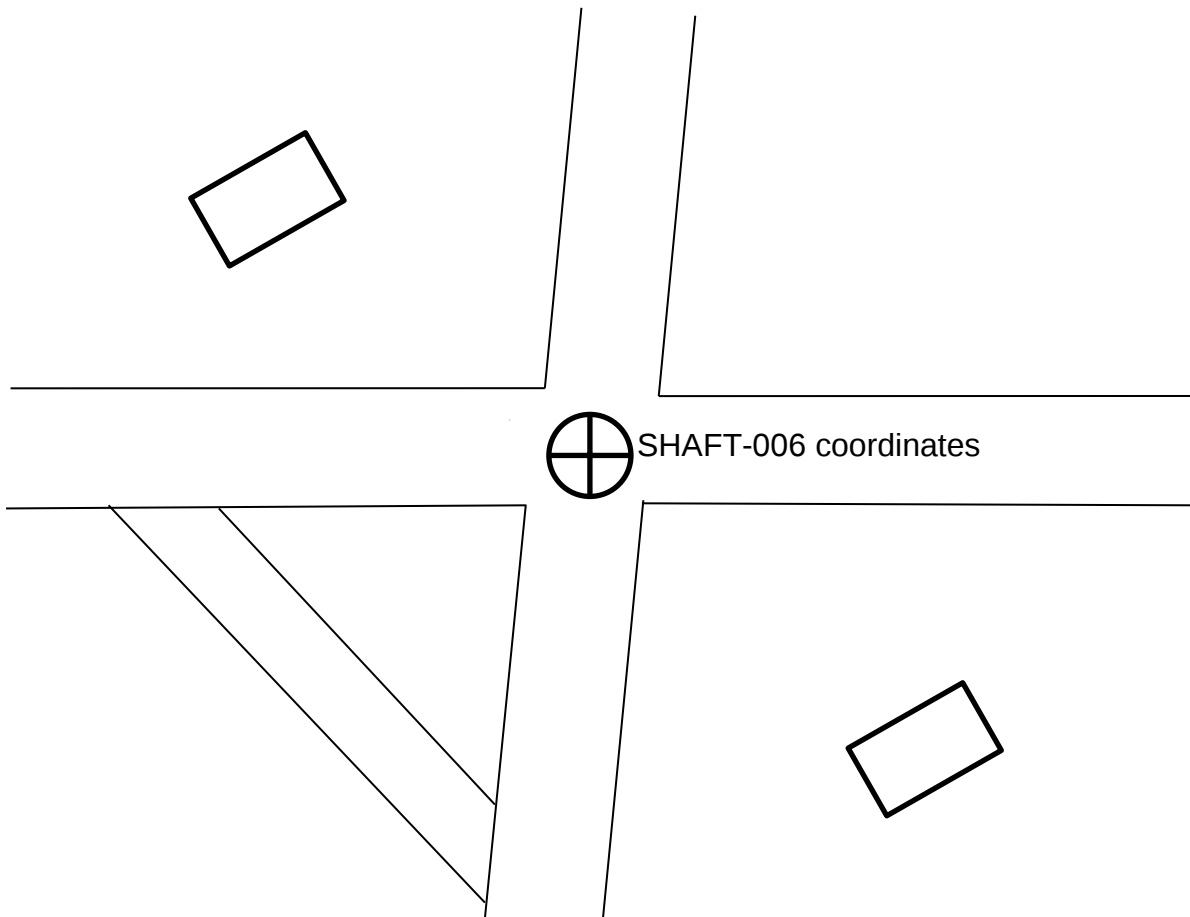
Remarks:	No groundwater encountered.
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Stability: Pit walls stable

S220141

Site A, Leconfield, Cleator Moor

SHAFT-006



Pecked into slag from 0.30m-0.60m at
centre of shaft marked ⊕

NTS



TrialPit No
SHAFT-008
A
Sheet 1 of 1

Date
15/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.40		 MADE GROUND: Grass over brown slightly clayey slightly gravelly topsoil. Gravel is fine to medium subangular to angular of sandstone, brick and slag. Greyish blue fused slag obstruction - unable to excavate through. End of Pit at 0.400m	1 2 3 4 5

Remarks:	No groundwater encountered.
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Stability: Pit walls stable

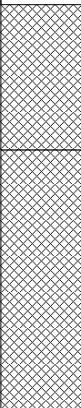


TrialPit No
SHAFT-008
B
Sheet 1 of 1

Date
15/02/2022

Scale
1:26

Logged
KW

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50			MADE GROUND: Grass over brown slightly clayey slightly gravelly topsoil. Gravel is fine to medium subangular to angular of sandstone, brick and slag.
				1.40			MADE GROUND: Orange brown very gravelly clay. Gravel is fine to medium subangular to angular of sandstone, mudstone and slag. End of Pit at 0.500m

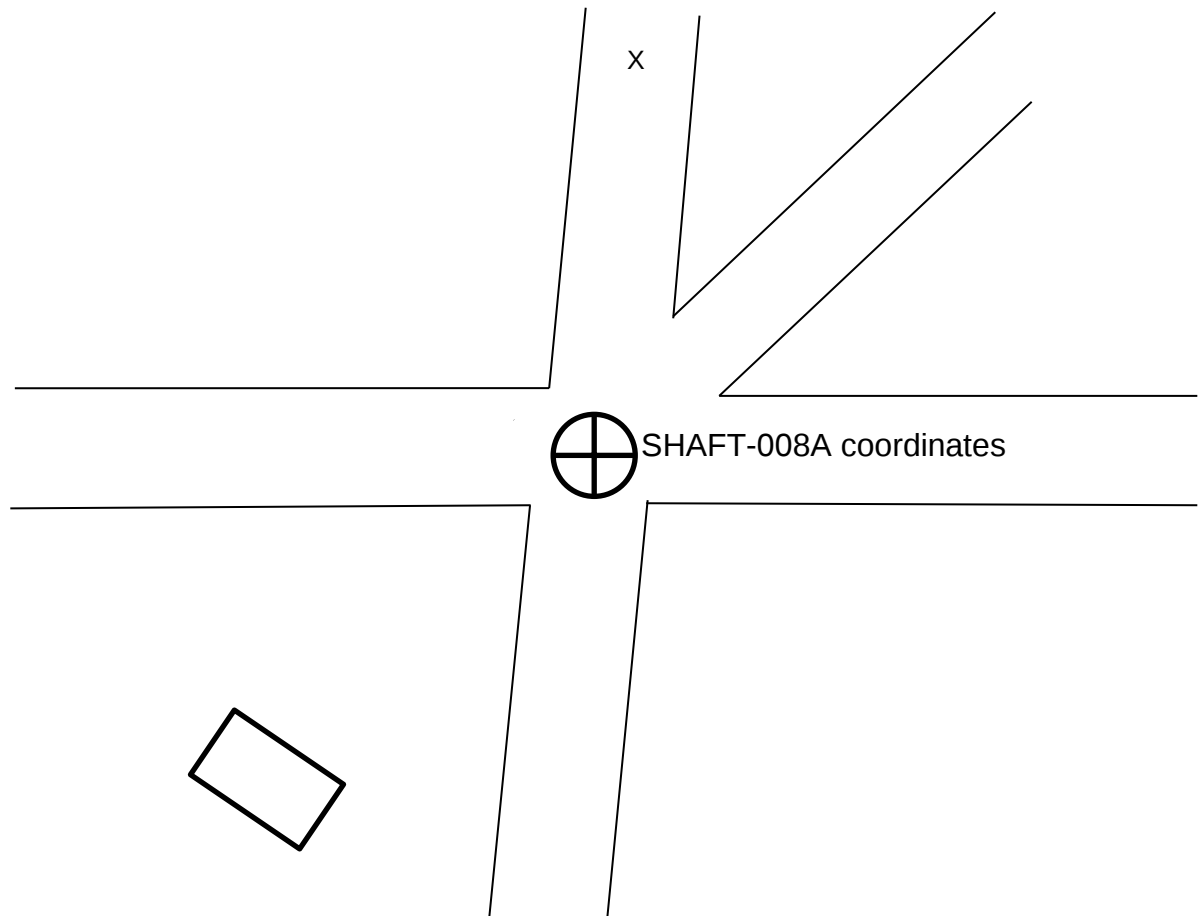
Remarks:	No groundwater encountered.
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Stability: Pit walls stable

S220141

Site A, Leconfield, Cleator Moor

SHAFT-008A AND SHAFT-008B



X denotes area with slag absent until
0.50mbgl

NTS



Rotary Open Hole Log

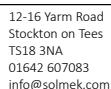
BH01

GL (AOD):	80.69m
Easting:	301394.86
Northing:	515617.71
Logged:	KW
Status:	FINAL

Method:	Rotary Openhole
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[illegible]

12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com Rotary Open Hole Log				Scale 1:150 Sheet 1 of 2													
				BH02													
Contract no: S220141		Site: Site A, Leconfield, Cleator Moor		Driller: Bainbridge Brothers Ltd		GL (AOD): 81.30m											
				Plant used: Beretta T59/Symmetrex		Easting: 301371.93											
Client: Copeland Borough Council				Started: 01/03/2022		Northing: 515580.54											
Method: Rotary Openhole				Ended: 01/03/2022		Logged: KW											
				Backfilled: 01/03/2022		Status: FINAL											
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures									
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture						
		0.40	80.90	MADE GROUND: Grass over dark brown slightly clayey very gravelly topsoil. Gravel is fine to medium subrounded to angular of sandstone, brick and slag.													
		1.30	80.00	MADE GROUND: Bluish grey slag.													
				MADE GROUND: Reddish brown sandy gravelly clay (reworked).													
		4.60	76.70	MADE GROUND: Bluish grey slag.													
		10.20	71.10	Brown very sandy gravelly CLAY.													
		11.40	69.90	Soft black silty CLAY.													
		11.90	69.40	MUDSTONE.													
		16.40	64.90	COAL Intact.													
		17.80	63.50	MUDSTONE.													
		19.40	61.90	Solid drilling noted by driller, however no flush returns so unable to log rock.													
Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water								
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)				
12.00 40.00	102 150	12.00	102						9.60	9.60							



Rotary Open Hole Log

Scale 1:150 Sheet 2 of 2

BH02

Contract no: S220141

Site: Site A, Leconfield, Cleator Moor

Driller:	Bainbridge Brothers Ltd
Plant used:	Beretta T59/Symmetrex
Started:	01/03/2022
Ended:	01/03/2022
Backfilled:	01/03/2022

GL (AOD):	81.30m
Easting:	301371.93
Northing:	515580.54
Logged:	KW
Status:	FINAL

Client:	Copeland Borough Council
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Method:	Rotary Openhole
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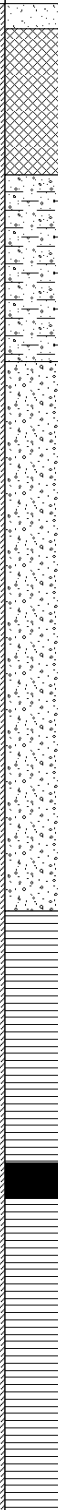
[illegible]

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com				Rotary Open Hole Log							Scale 1:150 Sheet 1 of 1																															
											BH03																															
Contract no: S220141				Site: Site A, Leconfield, Cleator Moor				Driller: Bainbridge Brothers Ltd				GL (AOD): 82.98m																														
								Plant used: Beretta T151/Symmetrex				Easting: 301632.92																														
								Started: 16/02/2022				Northing: 515561.21																														
Client: Copeland Borough Council								Ended: 16/02/2022				Logged: KW																														
Method: Rotary Openhole								Backfilled: 16/02/2022				Status: FINAL																														
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures																																		
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture																															
		0.50	82.48	MADE GROUND: Grass over dark brown clayey topsoil with rootlets. MADE GROUND: Bluish grey slag.																																						
		2.30	80.68	Orangish brown very sandy gravelly CLAY.																																						
		4.80	78.18	Reddish brown sandy gravelly CLAY.																																						
		7.30	75.68	Highly weathered SANDSTONE very fractured.																																						
		10.40	72.58	COAL intact no loss of flush.																																						
		10.50	72.48	MUDSTONE.																																						
		17.10	65.88	COAL intact no loss of flush.																																						
		17.90	65.08	MUDSTONE.																																						
		19.40	63.58	COAL intact no loss of flush.																																						
		20.00	62.98	MUDSTONE.																																						
		30.00	52.98	End of Borehole at 30.000m																																						
		Hole Diameter														Casing Depths				General Remarks				Flush Returns				Ground Water														
		Depth Base (m)		Diameter (mm)												Depth Base (m)		Diameter (mm)		1.2m hand excavated inspection pit. Inferred groundwater encountered at 5.90m.				From (m)		To (m)		Flush Type		Flush (%)		Depth Strike (m)		Depth Casing (m)		Depth Sealed (m)		Time Elapsed (min)		Water Level (m)		
		10.50		102												10.50		102												5.90		5.90		7.50								
		30.00		150																																						

GL (AOD): 83.08m
Easting: 301730
Northing: 515566
Logged: KW
Status: FINAL

Method: Rotary Openhole/Coring

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
13.50 19.50 30.00	102 102 150	13.50	102	1.2m hand excavated inspection pit. Inferred groundwater encountered at 9.10m and 16.40m.				9.10 16.40	9.10 13.50	10.50		

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com				Rotary Open Hole Log						Scale 1:150 Sheet 1 of 2		BH05		
Contract no: S220141				Site: Site A, Leconfield, Cleator Moor				Driller: Bainbridge Brothers Ltd		GL (AOD): 83.04m				
								Plant used: Beretta T151/Symmetrex		Easting: 301677.34				
Client: Copeland Borough Council								Started: 17/02/2022		Northing: 515490.63				
Method: Rotary Openhole								Ended: 17/02/2022		Logged: KW				
								Backfilled: 17/02/2022		Status: FINAL				
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures						
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture			
		0.50	82.54	MADE GROUND: Grey concrete.										
				MADE GROUND: Very dense bluish grey slag.										
					1.20 - 1.22	SPT (S)	N=50+ (25 for 5mm/50							
					1.20 - 1.65	D	for 10mm)							
					2.00 - 2.03	SPT (S)	N=50+ (25 for							
					2.00 - 2.45	D	10mm/50 for 20mm)							
					3.00 - 3.04	SPT (S)	N=50+ (25 for							
					3.00 - 3.45	D	10mm/50 for 35mm)							
		3.40	79.64	Firm to stiff consistency brown sandy gravelly high strength CLAY becoming reddish brown at 4.30m.	4.00 - 4.45	SPT (S)	N=13 (2,2/3,3,3,4)							
					4.00 - 4.45	D								
					5.00 - 5.45	SPT (S)	N=16 (1,2/3,4,4,5)							
					5.00 - 5.45	D								
					6.00 - 6.45	SPT (S)	N=15 (2,3/2,4,4,5)							
					6.00 - 6.45	D								
		7.10	75.94	Medium dense to very dense reddish brown SAND and GRAVELS. Gravel is medium to coarse subangular to subrounded of sandstone and mudstone.	7.50 - 7.95	SPT (S)	N=29 (4,7/10,6,5,8)							
					7.50 - 7.95	D								
					9.00 - 9.33	SPT (S)	N=50+ (10,12/16,23,11							
					9.00 - 9.45	D	for 30mm)							
					10.50 - 10.51	SPT (S)	N=50+ (25 for 5mm/50							
					10.50 - 10.95	D	for 5mm)							
					12.00 - 12.00	SPT (S)	N=50+ (25 for 0mm/50							
					12.00 - 12.45	D	for 5mm)							
					13.50 - 13.95	SPT (S)	N=30 (4,6/6,8,8,8)							
					13.50 - 13.95	D								
					15.00 - 15.45	SPT (S)	N=28 (5,7/10,6,5,7)							
					15.00 - 15.45	D								
					16.50 - 16.95	SPT (S)	N=38 (4,5/6,7,10,15)							
					16.50 - 16.95	D								
		18.00	65.04	Highly weathered weak clayey MUDSTONE.										
23.00		60.04	COAL intact no loss of flush.											
23.70		59.34	MUDSTONE.											
Hole Diameter		Casing Depths		General Remarks		Flush Returns				Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)			From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
18.00	102	18.00	102	1.2m hand excavated inspection pit. Inferred groundwater encountered at 5.90m and 17.10m.						5.90	5.90			
40.00	150									17.10	17.10			

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Rotary Open Hole Log							Scale 1:150 Sheet 2 of 2		
Contract no: S220141		Site: Site A, Leconfield, Cleator Moor			Driller: Bainbridge Brothers Ltd Plant used: Beretta T151/Symmetrex Started: 17/02/2022 Ended: 17/02/2022 Backfilled: 17/02/2022			GL (AOD): 83.04m Easting: 301677.34 Northing: 515490.63 Logged: KW Status: FINAL			
Client: Copeland Borough Council											
Method: Rotary Openhole											
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
				MUDSTONE.							
		36.20 36.50	46.84 46.54	COAL intact no loss of flush. MUDSTONE.							
		40.00	43.04	End of Borehole at 40.000m							

12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com SOLMEK				Cable Percussive with Rotary Core Follow-on Log										Scale 1:150 Sheet 1 of 2 BH07													
Contract no: S220141				Site: Site A, Leconfield, Cleator Moor						Driller: Bainbridge Brothers Ltd Beretta T151/Symmetrex/Beretta T59/Symmetrex 23/02/2022 Plant used: T59/Symmetrex 23/02/2022 Started: 25/02/2022 Ended: 25/02/2022 Backfilled: 25/02/2022				GL (AOD): 82.83m Easting: 301824 Northing: 515557 Logged: KW Status: FINAL													
Client: Copeland Borough Council				Method: Rotary Openhole/Coring																							
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description						Samples and Insitu Testing																	
										Depth (m)		Type	Results														
		7.10	75.73	MADE GROUND: Very dense bluish grey slag.						1.20 - 1.23		SPT (S)	N=50+ (25 for 10mm/50 for 15mm)														
										1.20 - 1.65		D	N=50+ (25 for 10mm/50 for 20mm)														
										2.00 - 2.03		SPT (S)	N=50+ (25 for 15mm/50 for 10mm)														
										2.00 - 2.45		D	N=50+ (25 for 20mm/50 for 10mm)														
										3.00 - 3.02		SPT (S)	N=50+ (25 for 10mm/50 for 15mm)														
										3.00 - 3.45		D	N=50+ (25 for 15mm/50 for 10mm)														
										4.00 - 4.03		SPT (S)	N=50+ (25 for 20mm/50 for 10mm)														
										4.00 - 4.45		D	N=50+ (25 for 10mm/50 for 15mm)														
										5.00 - 5.03		SPT (S)	N=50+ (25 for 10mm/50 for 15mm)														
										5.00 - 5.45		D	N=50+ (25 for 10mm/50 for 15mm)														
										6.00 - 6.03		SPT (S)	N=50+ (25 for 10mm/50 for 20mm)														
										6.00 - 6.45		D	N=50+ (25 for 10mm/50 for 20mm)														
		11.50	71.33	Firm consistency reddish brown very sandy medium to high strength CLAY.						7.50 - 7.95		SPT (S)	N=8 (1,2/1,2,2,3)														
										7.50 - 7.95		D															
										9.00 - 9.45		SPT (S)	N=9 (1,0/1,2,2,4)														
										9.00 - 9.45		D															
		12.00	70.83	SANDSTONE.						10.50 - 10.95		SPT (S)	N=16 (2,3/3,3,4,6)														
										10.50 - 10.95		D															
										12.00 - 13.00		C															
										12.00 - 13.00		C															
		15.00	67.83	Very weak to weak light reddish brown thinly bedded to thinly laminated distinctly weathered MUDSTONE. Fractures are subhorizontal to subvertical medium to closely spaced planar rough to clean.						12.00 - 13.00		C	75 70 65 NI														
										13.00 - 14.00		C	70 60 40 NI														
										14.00 - 15.00		C	60 30 10 NI														
										14.60-15.00m: Recovered as gravel.																	
										15.00 - 16.00		C	80 50 40 NI														
										16.00 - 17.00		C	75 60 25 NI														
										16.40-16.60m: Recovered as gravel.																	
										17.00 - 18.00		C	70 55 50 NI														
										17.00 - 18.00		C															
										18.00 - 19.00																	
										19.00 - 20.00																	
										20.00 - 21.00																	
		18.00	64.83	Medium strong light grey thinly bedded to thickly laminated moderately weathered siliceous SANDSTONE (coarse grained) fractures are medium to closely spaced undulating rough clean subhorizontal to horizontal.						17.00 - 18.00		C															
										18.00 - 19.00																	
										19.00 - 20.00																	
										20.00 - 21.00																	
										21.00 - 22.00																	
										22.00 - 23.00																	
										23.00 - 24.00																	
										24.00 - 25.00																	
										25.00 - 26.00																	
										26.00 - 27.00																	
										27.00 - 28.00																	
										28.00 - 29.00																	
		20.80	62.03	MUDSTONE.						29.00 - 30.00																	
										30.00 - 31.00																	
										31.00 - 32.00																	
										32.00 - 33.00																	
										33.00 - 34.00																	
										34.00 - 35.00																	
										35.00 - 36.00																	
										36.00 - 37.00																	
										37.00 - 38.00																	
										38.00 - 39.00																	
										39.00 - 40.00																	
										40.00 - 41.00																	
Hole Diameter				Casing Depths				General Remarks				Chiselling				Ground Water											
Depth Base (m)		Diameter (mm)		Depth Base (m)		Diameter (mm)		1.2m hand excavated inspection pit. Inferred groundwater encountered at 10.20m				From (m)		To (m)		Time (hr)		Depth Strike (m)		Depth Casing (m)		Depth Sealed (m)		Time Elapsed (min)		Water Level (m)	

Contract no: S220141

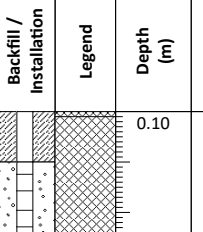
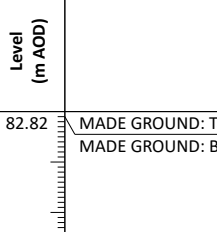
Site: Site A, Leconfield, Cleator Moor

Driller:	Bainbridge Brothers Ltd
Plant used:	Beretta T59/Symmetrex
Started:	21/02/2022
Ended:	21/02/2022
Backfilled:	21/02/2022

GL (AOD):	82.92m
Easting:	301843.16
Northing:	515494.72
Logged:	KW
Status:	FINAL

Client:	Copeland Borough Council
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Method:	Rotary Openhole
----------------	-----------------

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
		0.10	82.82	MADE GROUND: Tarmac. MADE GROUND: Bluish grey slag.							
		2.80	80.12	Reddish brown very sandy CLAY.							
		7.10	75.82	Brown SAND and GRAVELS.							
		8.70	74.22	SANDSTONE with thin beds of MUDSTONE.							
				MUDSTONE.							
		30.00	52.92								

Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
9.00 30.00	102 150	9.00	102		1.2m hand excavated inspection pit. Inferred groundwater encountered at 17.10m.					17.10	9.00		



12-16 Yarm Road
Stockton on Tees
TS18 3NA
01642 607083
info@solmek.com

Rotary Open Hole Log

Scale 1:150 Sheet 2 of 2

BH08

Contract no: S220141

Site: Site A, Leconfield, Cleator Moor

Driller:	Bainbridge Brothers Ltd
Plant used:	Beretta T59/Symmetrex
Started:	21/02/2022
Ended:	21/02/2022
Backfilled:	21/02/2022

GL (AOD):	82.92m
Easting:	301843.16
Northing:	515494.72
Logged:	KW
Status:	FINAL

Client:	Copeland Borough Council
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Method:	Rotary Openhole
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Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures				
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture	
		30.00	52.92	End of Borehole at 30.000m								

Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
9.00 30.00	102 150	9.00	102		1.2m hand excavated inspection pit. Inferred groundwater encountered at 17.10m.					17.10	9.00		

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Cable Percussive with Rotary Core Follow-on Log										Scale 1:150 Sheet 1 of 2		BH09		
Contract no: S220141		Site: Site A, Leconfield, Cleator Moor					Driller: Bainbridge Brothers Ltd Plant used: Beretta T59/Symmetrex Started: 21/02/2022 Ended: 21/02/2022 Backfilled: 21/02/2022					GL (AOD): 83.11m Easting: 301873 Northing: 515542 Logged: KW Status: FINAL				
Client: Copeland Borough Council																
Method: Rotary Openhole/Coring																
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description					Samples and Insitu Testing							
									Depth (m)		Type	Results				
		0.40	82.71	MADE GROUND: Grass over reddish brown sandy clay. MADE GROUND: Very dense bluish grey slag.					1.20 - 1.52		SPT (S) D	N=50+ (10,12/15,21,14 for 25mm) N=50+ (25 for 15mm/50 for 40mm) N=50+ (25 for 10mm/50 for 20mm) N=50+ (25 for 10mm/50 for 10mm) N=50+ (25 for 25mm/50 for 10mm) N=9 (1,2/2,2,2,3)				
		1.20 - 1.65														
		2.00 - 2.28		SPT (S) D												
		2.00 - 2.45														
		3.00 - 3.26		SPT (S) D												
		3.00 - 3.45														
		4.00 - 4.24		SPT (S) D												
		4.00 - 4.45														
		5.00 - 5.26		SPT (S) D												
		5.00 - 5.45														
		5.70	77.41	Loose light brown slightly clayey SAND.					6.00 - 6.45		SPT (S) D					
		6.00 - 6.45														
		7.10	76.01	Stiff consistency reddish brown slightly sandy gravelly high strength CLAY.					7.50 - 7.95		SPT (S) D	N=16 (2,2/3,4,4,5)				
		7.50 - 7.95														
		9.80	73.31	SANDSTONE.					9.00 - 9.45		SPT (S) D	N=24 (3,4/4,5,7,8)				
									9.00 - 9.45							
		10.50	72.61	Weak to medium strong dark reddish to greyish brown thinly bedded to thickly laminated partially unweathered to distinctly weathered accleceaus SANDSTONE. Fractures are subhorizontal closely spaced undulating rough clean. <u>11.00-11.10m: Recovered as gravel.</u> <u>11.80-12.00m: Recovered as gravel.</u> <u>12.30-12.80m: Recovered as gravel.</u>			10.50 - 11.50	C	10.50 - 11.50 C		85	55	40	NI		
		11.50 - 12.50	C				60	50			45	NI				
		12.50 - 13.50	C				80	60			50	NI				
		13.50 - 14.50	C				90	85			80	NI				
		14.50 - 15.50	C				70	60			50	NI				
		15.50 - 16.50	C				70	55			10	NI				
																
		16.50	66.61	<u>16.20-16.50m: Recovered as gravel.</u> SANDSTONE with thin beds of MUDSTONE.												
		22.10	61.01	COAL intact no loss of flush.												
		22.40	60.71	SANDSTONE with thin beds of MUDSTONE.												
		27.80	55.31	Solid drilling noted by driller, however no flush returns so unable to log rock.												
Hole Diameter		Casing Depths		General Remarks					Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m hand excavated inspection pit. Inferred groundwater encountered at 15.20m.					From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
10.50	102	10.50	102									15.20	10.50			
40.00	150															

Cable Percussive with Rotary Core Follow-on Log

Scale 1:150 Sheet 2 of 2

BH09

Contract no: S220141

Site: Site A, Leconfield, Cleator Moor

Driller:	Bainbridge Brothers Ltd
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Plant used: Beretta T59/Symmetrex

Started: 21/02/2022

Ended: 21/02/2022

Backfilled:	21/02/2022
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GL (AOD): 83.11m

Easting: 301873

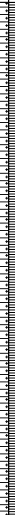
Northing: 515542

Logged: KW

Status: FINAL

Client:	Copeland Borough Council
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Method:	Rotary Openhole/Coring
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Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing							
					Depth (m)	Type	Results					
				Solid drilling noted by driller, however no flush returns so unable to log rock.								
				End of Borehole at 40.000m								
												
Hole Diameter		Casing Depths		General Remarks 1.2m hand excavated inspection pit. Inferred groundwater encountered at 15.20m.	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
10.50 40.00	102 150	10.50	102					15.20	10.50			

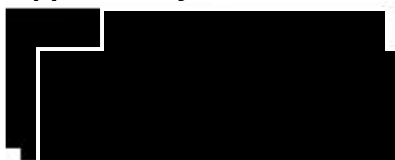
APPENDIX C:
Contamination Laboratory Results



Final Report

Report No.:	22-08333-1		
Initial Date of Issue:	11-Mar-2022		
Client	Solmek Ltd		
Client Address:	12 Yarm Road Stockton-on-Tees TS18 3NA		
Contact(s):	Lab Leo Cassidy Office		
Project	S220141 Site A, Cleator Moor		
Quotation No.:		Date Received:	07-Mar-2022
Order No.:	SOL-5950	Date Instructed:	07-Mar-2022
No. of Samples:	13		
Turnaround (Wkdays):	5	Results Due:	11-Mar-2022
Date Approved:	11-Mar-2022		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:					22-08333	22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:					1385292	1385293	1385297	1385302	1385303
	Sample Location:					TP02	TP03	TP07	TP15	TP16
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.2	0.5	0.8	0.1	0.3
	Bottom Depth (m):					0.3	0.6	0.9	0.2	
	Date Sampled:					16-Feb-2022	16-Feb-2022	15-Feb-2022	18-Feb-2022	18-Feb-2022
Determinand	Accred.	SOP	Type	Units	LOD					
pH	U	1010				10.3	10.7	9.7	10.0	8.9
Sulphate	U	1220		mg/l	1.0	55	34	61	13	2.2
Cyanide (Total)	U	1300		mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Hardness	U	1415		mg/l	15	110	180	230	130	200
Arsenic (Dissolved)	U	1455		µg/l	0.20	3.5	1.8	45	1.3	20
Boron (Dissolved)	U	1455		µg/l	10.0	200	130	170	130	95
Cadmium (Dissolved)	U	1455		µg/l	0.11	0.37	0.29	0.31	0.23	0.92
Chromium (Dissolved)	U	1455		µg/l	0.50	< 0.50	2.6	0.88	0.93	0.53
Copper (Dissolved)	U	1455		µg/l	0.50	2.6	8.6	20	< 0.50	61
Mercury (Dissolved)	U	1455		µg/l	0.05	0.19	0.69	0.08	0.23	0.17
Nickel (Dissolved)	U	1455		µg/l	0.50	2.6	29	4.2	0.50	3.1
Lead (Dissolved)	U	1455		µg/l	0.50	4.6	34	54	12	39
Selenium (Dissolved)	U	1455		µg/l	0.50	8.1	250	31	240	21
Zinc (Dissolved)	U	1455		µg/l	2.5	82	3400	170	81	74
Aliphatic TPH >C5-C6	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C6-C8	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C8-C10	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C10-C12	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C12-C16	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C16-C21	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C21-C35	N	1675		µg/l	0.10		< 0.10			< 0.10
Aliphatic TPH >C35-C44	N	1675		µg/l	0.10		< 0.10			< 0.10
Total Aliphatic Hydrocarbons	N	1675		µg/l	5.0		< 5.0			< 5.0
Aromatic TPH >C5-C7	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C7-C8	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C8-C10	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C10-C12	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C12-C16	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C16-C21	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C21-C35	N	1675		µg/l	0.10		< 0.10			< 0.10
Aromatic TPH >C35-C44	N	1675		µg/l	0.10		< 0.10			< 0.10
Total Aromatic Hydrocarbons	N	1675		µg/l	5.0		< 5.0			< 5.0
Total Petroleum Hydrocarbons	N	1675		µg/l	10		< 10			< 10
Naphthalene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzof[a]anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Leachate

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:					22-08333	22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:					1385292	1385293	1385297	1385302	1385303
	Sample Location:					TP02	TP03	TP07	TP15	TP16
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.2	0.5	0.8	0.1	0.3
	Bottom Depth (m):					0.3	0.6	0.9	0.2	
	Date Sampled:					16-Feb-2022	16-Feb-2022	15-Feb-2022	18-Feb-2022	18-Feb-2022
Determinand	Accred.	SOP	Type	Units	LOD					
Chrysene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800		µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	U	1920		mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Results - Soil

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:				22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:				1385291	1385292	1385293	1385294	1385295	1385296	1385297	1385298	1385299
	Sample Location:				TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP10	TP12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.2	0.5	0.2	0.0	0.4	0.8	0.0	0.1
	Bottom Depth (m):				0.2	0.3	0.6	0.3	0.1	0.6	0.9	0.1	
	Date Sampled:				16-Feb-2022	16-Feb-2022	16-Feb-2022	16-Feb-2022	16-Feb-2022	15-Feb-2022	15-Feb-2022	17-Feb-2022	17-Feb-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	20	13	4.6	27	20	13	16	16	19
Soil Colour	N	2040		N/A	Brown	Brown	Grey	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones, Roots and Wood	Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Gravel	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.6	9.9	9.7	9.4	9.3	9.0	9.4	10.3	10.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.2	1.6	1.7	1.7	0.57	< 0.40	1.5	0.68	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	mg/l	10	1500	1000	2200	1200	150	44	1600	1300	590
Cyanide (Total)	M	2300	mg/kg	0.50	0.5	0.5	0.8	0.5	< 0.50	< 0.50	< 0.50	0.8	< 0.50
Arsenic	M	2450	mg/kg	1.0	8.0	12	5.3	20	12	12	44	12	20
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.67	< 0.10	0.10	< 0.10	0.18	0.10	0.29	< 0.10
Chromium	M	2450	mg/kg	1.0	6.9	18	4.2	18	19	23	19	11	16
Copper	M	2450	mg/kg	0.50	18	18	5.5	24	27	14	42	17	18
Mercury	M	2450	mg/kg	0.10	< 0.10	0.14	< 0.10	< 0.10	0.90	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	5.2	17	5.2	26	20	20	50	16	20
Lead	M	2450	mg/kg	0.50	9.0	47	4.3	38	35	21	36	44	16
Selenium	M	2450	mg/kg	0.20	2.3	1.2	1.6	1.4	1.2	1.1	2.7	1.6	1.6
Zinc	M	2450	mg/kg	0.50	86	45	9.3	36	31	34	28	76	24
Organic Matter	M	2625	%	0.40	1.7	2.6	1.0	5.0	4.3	4.0	4.8	7.1	7.2
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		< 1.0						
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0						
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0		< 1.0						
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	41		< 1.0						
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	50		< 1.0						
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	7		< 1.0						
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	230		< 1.0						
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0						
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	330		< 5.0						
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		< 1.0						
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0						
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0		< 1.0						
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0		< 1.0						
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	5.9		< 1.0						
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	29		< 1.0						
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	160		< 1.0						
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	21		< 1.0						
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	220		< 5.0						
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	550		< 10						

Results - Soil

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:				22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:				1385291	1385292	1385293	1385294	1385295	1385296	1385297	1385298	1385299
	Sample Location:				TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP10	TP12
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.2	0.5	0.2	0.0	0.4	0.8	0.0	0.1
	Bottom Depth (m):				0.2	0.3	0.6	0.3	0.1	0.6	0.9	0.1	
	Date Sampled:				16-Feb-2022	16-Feb-2022	16-Feb-2022	16-Feb-2022	16-Feb-2022	15-Feb-2022	15-Feb-2022	17-Feb-2022	17-Feb-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	1.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	0.64	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	6.7	< 0.10	0.50	< 0.10	< 0.10	< 0.10	< 0.10	0.23
Pyrene	M	2700	mg/kg	0.10	< 0.10	6.1	< 0.10	0.48	< 0.10	< 0.10	< 0.10	< 0.10	0.36
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	3.6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	3.8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	4.0	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	1.8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	3.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	1.6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	0.65	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	1.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	35	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:				22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:				1385300	1385301	1385302	1385303
	Sample Location:				TP13	TP14	TP15	TP16
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.0	0.2	0.1	0.3
	Bottom Depth (m):				0.1		0.2	
	Date Sampled:				17-Feb-2022	17-Feb-2022	18-Feb-2022	18-Feb-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	21	7.9	6.5	14
Soil Colour	N	2040		N/A	Brown	Grey	Grey	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Gravel	Gravel	Clay
pH	M	2010		4.0	9.5	9.8	9.9	9.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.58	1.2	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	mg/l	10	190	1800	280	110
Cyanide (Total)	M	2300	mg/kg	0.50	0.7	0.5	< 0.50	0.7
Arsenic	M	2450	mg/kg	1.0	50	5.8	8.5	9.7
Cadmium	M	2450	mg/kg	0.10	0.12	< 0.10	< 0.10	< 0.10
Chromium	M	2450	mg/kg	1.0	15	3.4	18	23
Copper	M	2450	mg/kg	0.50	15	4.2	5.3	13
Mercury	M	2450	mg/kg	0.10	0.31	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	18	3.5	18	20
Lead	M	2450	mg/kg	0.50	10	2.1	5.6	10
Selenium	M	2450	mg/kg	0.20	0.52	1.6	1.7	0.33
Zinc	M	2450	mg/kg	0.50	19	5.4	21	24
Organic Matter	M	2625	%	0.40	5.3	< 0.40	0.81	1.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0		< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0		< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10		< 10

Results - Soil

Project: S220141 Site A, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:				22-08333	22-08333	22-08333	22-08333
Quotation No.:	Chemtest Sample ID.:				1385300	1385301	1385302	1385303
	Sample Location:				TP13	TP14	TP15	TP16
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.0	0.2	0.1	0.3
	Bottom Depth (m):				0.1		0.2	
	Date Sampled:				17-Feb-2022	17-Feb-2022	18-Feb-2022	18-Feb-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-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	Pentane extraction / GCxGC FID detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
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
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
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.
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-C6, >C6-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
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; Dibenz[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)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: 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

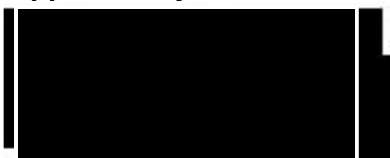
If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Final Report

Report No.:	22-08339-1		
Initial Date of Issue:	11-Mar-2022		
Client	Solmek Ltd		
Client Address:	12 Yarm Road Stockton-on-Tees TS18 3NA		
Contact(s):	Lab Leo Cassidy Office		
Project	S220141 Site A, Cleator Moor		
Quotation No.:		Date Received:	07-Mar-2022
Order No.:	SOL-5950	Date Instructed:	07-Mar-2022
No. of Samples:	5		
Turnaround (Wkdays):	5	Results Due:	11-Mar-2022
Date Approved:	11-Mar-2022		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Single Stage WAC

Project: S220141 Site A, Cleator Moor

Chemtest Job No: 22-08339					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1385315					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP01							
Top Depth(m): 0.1							
Bottom Depth(m): 0.2							
Sampling Date: 16-Feb-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	4.8	3	5	6
Loss On Ignition	2610	M	%	3.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	19	100	--	--
pH	2010	M		10.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.052	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0040	0.041	0.5	2	25
Barium	1455	U	0.21	2.1	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0057	0.5	10	70
Copper	1455	U	0.0032	0.032	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0006	0.0060	0.5	10	30
Nickel	1455	U	0.0007	0.0067	0.4	10	40
Lead	1455	U	0.0019	0.019	0.5	10	50
Antimony	1455	U	0.0018	0.018	0.06	0.7	5
Selenium	1455	U	0.0017	0.017	0.1	0.5	7
Zinc	1455	U	0.008	0.076	4	50	200
Chloride	1220	U	1.8	18	800	15000	25000
Fluoride	1220	U	3.5	35	10	150	500
Sulphate	1220	U	13	130	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: S220141 Site A, Cleator Moor

Chemtest Job No: 22-08339					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1385316					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP03							
Top Depth(m): 0.5							
Bottom Depth(m): 0.6							
Sampling Date: 16-Feb-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	2.8	3	5	6
Loss On Ignition	2610	M	%	6.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	6.4	100	--	--
pH	2010	M		9.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.042	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0004	0.0039	0.5	2	25
Barium	1455	U	0.25	2.5	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0002	0.0021	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0073	0.06	0.7	5
Selenium	1455	U	0.0060	0.060	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	5.8	58	800	15000	25000
Fluoride	1220	U	1.7	17	10	150	500
Sulphate	1220	U	40	400	1000	20000	50000
Total Dissolved Solids	1020	N	170	1700	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.1	61	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: S220141 Site A, Cleator Moor

Chemtest Job No: 22-08339					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1385317					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP13							
Top Depth(m): 0.0							
Bottom Depth(m): 0.1							
Sampling Date: 17-Feb-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	3.3	3	5	6
Loss On Ignition	2610	M	%	11	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	--
pH	2010	M		10.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.050	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0011	0.011	0.5	2	25
Barium	1455	U	0.21	2.1	20	100	300
Cadmium	1455	U	0.00012	0.0012	0.04	1	5
Chromium	1455	U	0.0008	0.0080	0.5	10	70
Copper	1455	U	0.0015	0.015	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0003	0.0027	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0020	0.020	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.7	17	800	15000	25000
Fluoride	1220	U	0.48	4.8	10	150	500
Sulphate	1220	U	5.4	54	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	31	310	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: S220141 Site A, Cleator Moor

Chemtest Job No: 22-08339					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1385318					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP14							
Top Depth(m): 0.2							
Bottom Depth(m):							
Sampling Date: 17-Feb-2022							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	< 0.20	3	5	6
Loss On Ignition	2610	M	%	3.3	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	78	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100	--	--
pH	2010	M		10.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.060	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0030	0.5	2	25
Barium	1455	U	0.25	2.5	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0012	0.012	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0003	0.0031	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0010	0.0098	0.06	0.7	5
Selenium	1455	U	0.0047	0.047	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	10	100	800	15000	25000
Fluoride	1220	U	1.9	19	10	150	500
Sulphate	1220	U	49	490	1000	20000	50000
Total Dissolved Solids	1020	N	200	2000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.0	70	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: S220141 Site A, Cleator Moor

Chemtest Job No: 22-08339					Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1385319					Limits			
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:								
Sample Location: TP16								
Top Depth(m): 0.3								
Bottom Depth(m):								
Sampling Date: 18-Feb-2022								
Determinand	SOP	Accred.	Units					
Total Organic Carbon	2625	M	%		2.0	3	5	6
Loss On Ignition	2610	M	%		6.7	--	--	10
Total BTEX	2760	M	mg/kg		< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg		< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg		< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg		< 2.0	100	--	--
pH	2010	M			9.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg		0.039	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l		10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0026	0.026	0.5	2	25	
Barium	1455	U	0.11	1.1	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.0005	0.0051	0.5	10	70	
Copper	1455	U	0.0014	0.014	2	50	100	
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2	
Molybdenum	1455	U	0.0003	0.0027	0.5	10	30	
Nickel	1455	U	0.0005	0.0050	0.4	10	40	
Lead	1455	U	0.0006	0.0057	0.5	10	50	
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5	
Selenium	1455	U	0.0012	0.012	0.1	0.5	7	
Zinc	1455	U	< 0.003	< 0.003	4	50	200	
Chloride	1220	U	1.2	12	800	15000	25000	
Fluoride	1220	U	0.68	6.8	10	150	500	
Sulphate	1220	U	4.3	43	1000	20000	50000	
Total Dissolved Solids	1020	N	59	580	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-	
Dissolved Organic Carbon	1610	U	14	140	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	21

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
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
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
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; Dibenz[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.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



EDM20-TXJTV-HQ5MG

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

HWOL_22-08333-20220314 111051

Description/Comments

Project

S220141

Site

Site A, Cleator Moor

Classified by

Name: **Leo Cassidy**
 Date: **17 Mar 2022 14:43 GMT**
 Telephone: **01642 607083**

Company: **Solmek**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification

Date

22 Apr 2021

Next 3 year Refresher due by Apr 2024

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP01-16/02/2022-0.1	0.1-0.2	Non Hazardous		2
2	TP02-16/02/2022-0.2	0.2-0.3	Non Hazardous		4
3	TP03-16/02/2022-0.5	0.5-0.6	Non Hazardous		6
4	TP04-16/02/2022-0.2	0.2-0.3	Non Hazardous		8
5	TP05-16/02/2022-0.0	0.0-0.1	Non Hazardous		10
6	TP06-15/02/2022-0.4	0.4-0.6	Non Hazardous		12
7	TP07-15/02/2022-0.8	0.8-0.9	Non Hazardous		14
8	TP10-17/02/2022-0.0	0.0-0.1	Non Hazardous		16
9	TP12-17/02/2022-0.1	0.1	Non Hazardous		18
10	TP13-17/02/2022-0.0	0.0-0.1	Non Hazardous		20
11	TP14-17/02/2022-0.2	0.2	Non Hazardous		22
12	TP15-18/02/2022-0.1	0.1-0.2	Non Hazardous		24
13	TP16-18/02/2022-0.3	0.3	Non Hazardous		26

Related documents

#	Name	Description
1	HWOL_22-08333-20220314 111051.hwol	.hwol file used to create the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Leo Cassidy

Created date: 17 Mar 2022 14:43 GMT

Appendices

	Page
Appendix A: Classifier defined and non GB MCL determinands	28
Appendix B: Rationale for selection of metal species	29
Appendix C: Version	30

Classification of sample: TP01-16/02/2022-0.1

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP01-16/02/2022-0.1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.1-0.2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
20%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8 mg/kg	1.32	8.45 mg/kg	0.000845 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				1.2 mg/kg	3.22	3.091 mg/kg	0.000309 %	✓		
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	16.213 mg/kg	0.00162 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	9 mg/kg	1.56	11.231 mg/kg	0.00072 %	✓		
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				5.2 mg/kg	2.976	12.381 mg/kg	0.00124 %	✓		
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				2.3 mg/kg	2.554	4.699 mg/kg	0.00047 %	✓		
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				86 mg/kg	2.774	190.861 mg/kg	0.0191 %	✓		
	024-007-00-3	236-878-9	13530-65-9								
10	TPH (C6 to C40) petroleum group		TPH		550 mg/kg		440 mg/kg	0.044 %	✓		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5 mg/kg	1.884	0.754 mg/kg	0.0000754 %	✓		
	006-007-00-5										
12	pH		PH		10.6 pH		10.6 pH	10.6 pH			
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
14	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
15	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
16	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		6.9 mg/kg	1.462	8.068 mg/kg	0.000807 %	✓		
30	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0694 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because No liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.044%)

Classification of sample: TP02-16/02/2022-0.2

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP02-16/02/2022-0.2	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2-0.3 m	
Moisture content:	
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				12 mg/kg	1.32	13.784 mg/kg	0.00138 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		boron { diboron trioxide; boric oxide }				1.6 mg/kg	3.22	4.482 mg/kg	0.000448 %	✓		
		005-008-00-8	215-125-8	1303-86-2								
3		cadmium { cadmium oxide }				0.67 mg/kg	1.142	0.666 mg/kg	0.0000666 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
4		copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	17.631 mg/kg	0.00176 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
5		lead { lead chromate }			1	47 mg/kg	1.56	63.781 mg/kg	0.00409 %	✓		
		082-004-00-2	231-846-0	7758-97-6								
6		mercury { mercury dichloride }				0.14 mg/kg	1.353	0.165 mg/kg	0.0000165 %	✓		
		080-010-00-X	231-299-8	7487-94-7								
7		nickel { nickel chromate }				17 mg/kg	2.976	44.019 mg/kg	0.0044 %	✓		
		028-035-00-7	238-766-5	14721-18-7								
8		selenium { nickel selenate }				1.2 mg/kg	2.554	2.666 mg/kg	0.000267 %	✓		
		028-031-00-5	239-125-2	15060-62-5								
9		zinc { zinc chromate }				45 mg/kg	2.774	108.608 mg/kg	0.0109 %	✓		
		024-007-00-3	236-878-9	13530-65-9								
10		cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5 mg/kg	1.884	0.82 mg/kg	0.000082 %	✓		
		006-007-00-5										
11		pH				10.3 pH		10.3 pH	10.3 pH			
				PH								
12		naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-052-00-2	202-049-5	91-20-3								
13		acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-917-1	208-96-8								
14		acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-469-6	83-32-9								
15		fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-695-5	86-73-7								
16		phenanthrene				1.5 mg/kg		1.305 mg/kg	0.000131 %	✓		
			201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		0.64 mg/kg		0.557 mg/kg	0.0000557 %	✓	
18	fluoranthene	205-912-4	206-44-0		6.7 mg/kg		5.829 mg/kg	0.000583 %	✓	
19	pyrene	204-927-3	129-00-0		6.1 mg/kg		5.307 mg/kg	0.000531 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.6 mg/kg		3.132 mg/kg	0.000313 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	3.8 mg/kg		3.306 mg/kg	0.000331 %	✓	
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	4 mg/kg		3.48 mg/kg	0.000348 %	✓	
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.8 mg/kg		1.566 mg/kg	0.000157 %	✓	
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.1 mg/kg		2.697 mg/kg	0.00027 %	✓	
25	indeno[123-cd]pyrene	205-893-2	193-39-5		1.6 mg/kg		1.392 mg/kg	0.000139 %	✓	
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.65 mg/kg		0.566 mg/kg	0.0000566 %	✓	
27	benzo[ghi]perylene	205-883-8	191-24-2		1.5 mg/kg		1.305 mg/kg	0.000131 %	✓	
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		18 mg/kg	1.462	22.888 mg/kg	0.00229 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0288 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP03-16/02/2022-0.5

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP03-16/02/2022-0.5	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5-0.6 m	
Moisture content:	
4.6%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 4.6% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				5.3	mg/kg	1.32	6.676	mg/kg	0.000668 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		boron { diboron trioxide ; boric oxide }				1.7	mg/kg	3.22	5.222	mg/kg	0.000522 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
3		cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
		048-002-00-0	215-146-2	1306-19-0									
4		copper { dicopper oxide ; copper (I) oxide }				5.5	mg/kg	1.126	5.908	mg/kg	0.000591 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
5		lead { lead chromate }			1	4.3	mg/kg	1.56	6.399	mg/kg	0.00041 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
6		mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
7		nickel { nickel chromate }				5.2	mg/kg	2.976	14.765	mg/kg	0.00148 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
8		selenium { nickel selenate }				1.6	mg/kg	2.554	3.898	mg/kg	0.00039 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
9		zinc { zinc chromate }				9.3	mg/kg	2.774	24.613	mg/kg	0.00246 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
10		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
11		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.8	mg/kg	1.884	1.438	mg/kg	0.000144 %	✓	
		006-007-00-5											
12		pH				10.7	pH		10.7	pH	10.7 pH		
				PH									
13		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
15		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
16		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		4.2 mg/kg	1.462	5.856 mg/kg	0.000586 %	✓		
30	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.00844 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP04-16/02/2022-0.2

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP04-16/02/2022-0.2	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2-0.3 m	
Moisture content:	
27%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 27% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	19.277 mg/kg	0.00193 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				1.7 mg/kg	3.22	3.996 mg/kg	0.0004 %	✓		
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.0834 mg/kg	0.00000834 %	✓		
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				24 mg/kg	1.126	19.726 mg/kg	0.00197 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	38 mg/kg	1.56	43.269 mg/kg	0.00277 %	✓		
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				26 mg/kg	2.976	56.49 mg/kg	0.00565 %	✓		
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.4 mg/kg	2.554	2.61 mg/kg	0.000261 %	✓		
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				36 mg/kg	2.774	72.905 mg/kg	0.00729 %	✓		
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5 mg/kg	1.884	0.688 mg/kg	0.0000688 %	✓		
	006-007-00-5										
11	pH				9.4 pH		9.4 pH	9.4 pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		0.5 mg/kg		0.365 mg/kg	0.0000365 %	✓	
19	pyrene	204-927-3	129-00-0		0.48 mg/kg		0.35 mg/kg	0.000035 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		18 mg/kg	1.462	19.205 mg/kg	0.00192 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0225 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP05-16/02/2022-0.0

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP05-16/02/2022-0.0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.0-0.1 m	
Moisture content:	
20%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				12 mg/kg	1.32	12.675 mg/kg	0.00127 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.57 mg/kg	3.22	1.468 mg/kg	0.000147 %		✓	
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				27 mg/kg	1.126	24.319 mg/kg	0.00243 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	35 mg/kg	1.56	43.675 mg/kg	0.0028 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				0.9 mg/kg	1.353	0.975 mg/kg	0.0000975 %		✓	
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				20 mg/kg	2.976	47.62 mg/kg	0.00476 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.2 mg/kg	2.554	2.452 mg/kg	0.000245 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				31 mg/kg	2.774	68.799 mg/kg	0.00688 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
11	pH				9.3 pH		9.3 pH	9.3 pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		19 mg/kg	1.462	22.216 mg/kg	0.00222 %	✓		
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0211 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Classification of sample: TP06-15/02/2022-0.4

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP06-15/02/2022-0.4	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4-0.6 m	
Moisture content:	
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				12 mg/kg	1.32	13.784 mg/kg	0.00138 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.18 mg/kg	1.142	0.179 mg/kg	0.0000179 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				14 mg/kg	1.126	13.713 mg/kg	0.00137 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	21 mg/kg	1.56	28.498 mg/kg	0.00183 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				20 mg/kg	2.976	51.787 mg/kg	0.00518 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.1 mg/kg	2.554	2.444 mg/kg	0.000244 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				34 mg/kg	2.774	82.059 mg/kg	0.00821 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
11	pH				9 pH		9 pH	9pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		23 mg/kg	1.462	29.246 mg/kg	0.00292 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0216 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP07-15/02/2022-0.8

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP07-15/02/2022-0.8	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.8-0.9 m	
Moisture content:	
16%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				44 mg/kg	1.32	48.799 mg/kg	0.00488 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				1.5 mg/kg	3.22	4.057 mg/kg	0.000406 %		✓	
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.096 mg/kg	0.0000096 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				42 mg/kg	1.126	39.721 mg/kg	0.00397 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	36 mg/kg	1.56	47.169 mg/kg	0.00302 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				50 mg/kg	2.976	125.003 mg/kg	0.0125 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				2.7 mg/kg	2.554	5.792 mg/kg	0.000579 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				28 mg/kg	2.774	65.248 mg/kg	0.00652 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
11	pH				9.7 pH		9.7 pH	9.7 pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		19 mg/kg	1.462	23.326 mg/kg	0.00233 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0345 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP10-17/02/2022-0.0

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP10-17/02/2022-0.0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.0-0.1 m	
Moisture content:	
16%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				12 mg/kg	1.32	13.309 mg/kg	0.00133 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.68 mg/kg	3.22	1.839 mg/kg	0.000184 %	✓		
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.29 mg/kg	1.142	0.278 mg/kg	0.0000278 %	✓		
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	16.078 mg/kg	0.00161 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	44 mg/kg	1.56	57.651 mg/kg	0.0037 %	✓		
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD	
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				16 mg/kg	2.976	40.001 mg/kg	0.004 %	✓		
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.6 mg/kg	2.554	3.432 mg/kg	0.000343 %	✓		
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				76 mg/kg	2.774	177.102 mg/kg	0.0177 %	✓		
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.8 mg/kg	1.884	1.266 mg/kg	0.000127 %	✓		
	006-007-00-5										
11	pH				10.3 pH		10.3 pH	10.3 pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		11 mg/kg	1.462	13.505 mg/kg	0.00135 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0306 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP12-17/02/2022-0.1

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP12-17/02/2022-0.1	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.1 m	
Moisture content:	
19%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 19% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	21.389 mg/kg	0.00214 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	16.415 mg/kg	0.00164 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	16 mg/kg	1.56	20.215 mg/kg	0.0013 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				20 mg/kg	2.976	48.215 mg/kg	0.00482 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.6 mg/kg	2.554	3.31 mg/kg	0.000331 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				24 mg/kg	2.774	53.929 mg/kg	0.00539 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
11	pH				10.6 pH		10.6 pH	10.6 pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		0.23 mg/kg		0.186 mg/kg	0.0000186 %	✓	
19	pyrene	204-927-3	129-00-0		0.36 mg/kg		0.292 mg/kg	0.0000292 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		16 mg/kg	1.462	18.942 mg/kg	0.00189 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.018 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP13-17/02/2022-0.0

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP13-17/02/2022-0.0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.0-0.1 m	
Moisture content:	
21%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				50	mg/kg	1.32	52.153	mg/kg	0.00522 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		boron { diboron trioxide; boric oxide }				0.58	mg/kg	3.22	1.475	mg/kg	0.000148 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
3		cadmium { cadmium oxide }				0.12	mg/kg	1.142	0.108	mg/kg	0.0000108 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
4		copper { dicopper oxide; copper (I) oxide }				15	mg/kg	1.126	13.342	mg/kg	0.00133 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
5		lead { lead chromate }			1	10	mg/kg	1.56	12.323	mg/kg	0.00079 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
6		mercury { mercury dichloride }				0.31	mg/kg	1.353	0.331	mg/kg	0.0000331 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
7		nickel { nickel chromate }				18	mg/kg	2.976	42.322	mg/kg	0.00423 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
8		selenium { nickel selenate }				0.52	mg/kg	2.554	1.049	mg/kg	0.000105 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
9		zinc { zinc chromate }				19	mg/kg	2.774	41.64	mg/kg	0.00416 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
10		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
11		cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.7	mg/kg	1.884	1.042	mg/kg	0.000104 %	✓	
		006-007-00-5											
12		pH				9.5	pH		9.5	pH	9.5 pH		
				PH									
13		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
15		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
16		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		15 mg/kg	1.462	17.319 mg/kg	0.00173 %		✓	
30	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.019 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP14-17/02/2022-0.2

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP14-17/02/2022-0.2	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.9% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				5.8	mg/kg	1.32	7.053	mg/kg	0.000705 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		boron { diboron trioxide; boric oxide }				1.2	mg/kg	3.22	3.559	mg/kg	0.000356 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
3		cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
		048-002-00-0	215-146-2	1306-19-0									
4		copper { dicopper oxide; copper (I) oxide }				4.2	mg/kg	1.126	4.355	mg/kg	0.000436 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
5		lead { lead chromate }			1	2.1	mg/kg	1.56	3.017	mg/kg	0.000193 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
6		mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
7		nickel { nickel chromate }				3.5	mg/kg	2.976	9.594	mg/kg	0.000959 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
8		selenium { nickel selenate }				1.6	mg/kg	2.554	3.763	mg/kg	0.000376 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
9		zinc { zinc chromate }				5.4	mg/kg	2.774	13.797	mg/kg	0.00138 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
10		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
11		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5	mg/kg	1.884	0.868	mg/kg	0.0000868 %	✓	
		006-007-00-5											
12		pH				9.8	pH		9.8	pH	9.8 pH		
				PH									
13		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
15		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
16		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		3.4 mg/kg	1.462	4.577 mg/kg	0.000458 %	✓	
30	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.00614 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP15-18/02/2022-0.1

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP15-18/02/2022-0.1	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.1-0.2 m	
Moisture content:	
6.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8.5 mg/kg	1.32	10.493 mg/kg	0.00105 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				5.3 mg/kg	1.126	5.579 mg/kg	0.000558 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	5.6 mg/kg	1.56	8.167 mg/kg	0.000524 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				18 mg/kg	2.976	50.091 mg/kg	0.00501 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				1.7 mg/kg	2.554	4.059 mg/kg	0.000406 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				21 mg/kg	2.774	54.47 mg/kg	0.00545 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
11	pH				10 pH		10 pH	10pH			
			pH								
12	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
15	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		18 mg/kg	1.462	24.598 mg/kg	0.00246 %	✓	
29	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0159 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP16-18/02/2022-0.3

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP16-18/02/2022-0.3	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.3 m	
Moisture content:	
14%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				9.7 mg/kg	1.32	11.014 mg/kg	0.0011 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	12.587 mg/kg	0.00126 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	10 mg/kg	1.56	13.414 mg/kg	0.00086 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel chromate }				20 mg/kg	2.976	51.192 mg/kg	0.00512 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { nickel selenate }				0.33 mg/kg	2.554	0.725 mg/kg	0.0000725 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc chromate }				24 mg/kg	2.774	57.258 mg/kg	0.00573 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
10	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.7 mg/kg	1.884	1.134 mg/kg	0.000113 %		✓	
	006-007-00-5										
12	pH		PH		9.7 pH		9.7 pH	9.7 pH			
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
14	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
15	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
16	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	chromium { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		23 mg/kg	1.462	28.91 mg/kg	0.00289 %		✓	
30	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0185 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▪ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 06 Aug 2015
 Hazard Statements: Carc. 2; H351

▪ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 23 Jul 2015
 Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

▪ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
 Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>
 Data source date: 17 Jul 2015
 Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

▪ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
 Data source: CLP combined data
 Data source date: 26 Mar 2019
 Hazard Statements: Muta. 2; H341, Acute Tox. 3; H331, Acute Tox. 3; H311, Acute Tox. 3; H301, STOT RE 2; H373, Skin Corr. 1B; H314, Skin Corr. 1B; H314 >= 3 %, Skin Irrit. 2; H315 1 £ conc. < 3 %, Eye Irrit. 2; H319 1 £ conc. < 3 %, Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

chromium {chromium(III) oxide (worst case)}

Worst case

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2022.25.4995.9469 (25 Jan 2022)

HazWasteOnline Database: 2022.25.4995.9469 (25 Jan 2022)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021



LABORATORY REPORT



4043

Contract Number: PSL22/1948

Report Date: 31 March 2022
Client's Reference: S220141
Client Name: Solmek
12 Yarm Road
Stockton-on-Tees
TS18 3NA

For the attention of: Leo Cassidy

Contract Title: Site A, Leconfield, Cleator Moor
Date Received: 16/3/2022
Date Commenced: 16/3/2022
Date Completed: 31/3/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

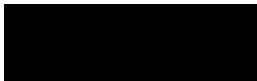
Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)


S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

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awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

[illegible]

***Note** All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular



Site A, Leconfield, Cleator Moor

Contract No:

PSL22/1948

Client Ref:

S220141

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

[illegible]

***Note** All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random



Site A, Leconfield, Cleator Moor

Contract No:

PSL22/1948

Client Ref:

S220141

DETERMINATION OF UNCONFINED COMPRESSIVE STRENGTH

ISRM Suggested Methods, pp 111 –116, 1981.

[illegible]

Site A, Leconfield, Cleator Moor

Contract No:

PSL22/1948

Client Ref:

S220141



Certificate of Analysis

Certificate Number 22-06115

Issued: 04-Apr-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-06115

Client Reference PSL22/1948

Order No (not supplied)

Contract Title Site A Leconfield, Cleator Moor

Description 3 Soil samples.

Date Received 30-Mar-22

Date Started 30-Mar-22

Date Completed 04-Apr-22

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



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 22-06115

Client Ref PSL22/1948

Contract Title Site A Leconfield, Cleator Moor

Lab No	1988912	1988913	1988914
Sample ID	BH04	BH07	BH09
Depth	15.00-15.50	12.30-13.00	16.00-16.15
Other ID			
Sample Type	C	C	C
Sampling Date	18/02/2022	24/02/2022	21/02/2022
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Inorganics						
pH	DETSC 2008#		pH	8.3	8.0	8.3
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	12	11	< 10

Information in Support of the Analytical Results

Our Ref 22-06115
 Client Ref PSL22/1948
 Contract Site A Leconfield, Cleator Moor

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
1988912	BH04 15.00-15.50 SOIL	18/02/22		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
1988913	BH07 12.30-13.00 SOIL	24/02/22		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
1988914	BH09 16.00-16.15 SOIL	21/02/22		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic 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

End of Report

APPENDIX D:
Geotechnical Laboratory Results



2183

Final Report

Report No.: 22-10840-1
Initial Date of Issue: 28-Mar-2022
Client Solmek Ltd
Client Address: 12 Yarm Road
Stockton-on-Tees
TS18 3NA
Contact(s): B Atkinson
Joe Brischuk
Lab
Leo Cassidy
Office
Project S220141 Site A, Leconfield, Cleator
Moor

Quotation No.:		Date Received:	23-Mar-2022
Order No.:	LAB1385	Date Instructed:	23-Mar-2022
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	29-Mar-2022
Date Approved:	28-Mar-2022		

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: S220141 Site A, Leconfield, Cleator Moor

Client: Solmek Ltd	Chemtest Job No.:				22-10840	22-10840	22-10840	22-10840
Quotation No.:	Chemtest Sample ID.:				1396542	1396543	1396544	1396545
	Sample Location:				BH05	BH05	BH07	BH09
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				4.00	13.50	9.00	6.00
	Bottom Depth (m):				4.45	13.95	9.45	6.45
	Date Sampled:				17-Feb-2022	17-Feb-2022	17-Feb-2022	17-Feb-2022
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	12	9.2	18	11
pH	U	2010		4.0	[B] 8.2	[B] 8.6	[B] 8.4	[B] 10.0
Sulphate (2:1 Water Soluble) as SO4	U	2120	mg/l	10	[B] 170	[B] 33	[B] 74	[B] 490

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1396542			BH05	17-Feb-2022	B	Plastic Tub 500g
1396543			BH05	17-Feb-2022	B	Plastic Tub 500g
1396544			BH07	17-Feb-2022	B	Plastic Tub 500g
1396545			BH09	17-Feb-2022	B	Plastic Tub 500g

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

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

APPENDIX E:
Notes on Limitations & Contamination Guidance

UK BACKGROUND

Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *“identify and remove unacceptable risks to human health and the environment”* and to *“seek to ensure that contaminated land is made suitable for its current use”*.

Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as *“the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land”* and by *“the scale and seriousness of such harm or pollution if it did occur”*.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *“land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.”*

Categories 3 and 4 *“encompass land which is not capable of being determined on such grounds”*.

PRELIMINARY CONCEPTUAL MODEL

Preliminary Conceptual Models are undertaken in accordance with CIRIA C552. The Preliminary Conceptual Model assesses the consequence and the likelihood of a risk being realised to provide a risk classification, using the tables detailed below.

CONSEQUENCE OF RISK BEING REALISED (Based on C552 CIRIA, 2001)

Classification	Definition	Example
Severe	Short-term (acute) risk to human health, the environment, an element of the development or other aspect with is likely to result in <i>significant harm</i> , damage or both.	High concentrations of cyanide on the surface of an informal recreational area. Major spills of contaminants from site into controlled water. High concentrations of explosive gas in the subsurface environment that have a clear unobstructed pathway into buildings.
Moderate	Chronic damage to human health, a plausible chance that an event will occur, although the timeline is not immediate to be in the short-term.	Appreciable concentration of contamination that over the longer-term will cause significant harm i.e. high lead concentration in topsoil. Shallow mine workings that are potentially unstable but may remain in a satisfactory or stable conditions for a number of years.
Mild	Low level pollution of non-sensitive water, a feasible hazardous scenario although the timeline of such occurring can probably be considered in 10's of years.	The effect of high sulphate concentrations on structural concrete. Pollution of non-classified groundwater.
Minor	Harm, although not necessarily significant to human health, or with respect to other aspects of the development, which are considered implausible in terms of occurrence, or will have little consequential impact.	The presence of contaminants at such low concentrations that protective equipment is required during site works. Any damage to structures is minimal and will not be structural in characteristics.

PROBABILITY OF RISK BEING REALISED (C552 CIRIA, 2001)

Classification	Definition
High Likelihood	There is a viable pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence that the receptor has been harmed or polluted.
Likely	There is a viable pollutant linkage and all elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a viable pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a viable pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK CLASSIFICATION MATRIX (C552 CIRIA, 2001)

Risk = Probability x Consequence		Consequence			
		Severe	Moderate	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

HUMAN RECEPTORS

Human exposure to contaminants present in soils can occur via several pathways. Direct exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatilised compounds, and inadvertent soil ingestion (or deliberate soil ingestion in the case of some children). Other indirect pathways include human ingestion of plants grown in contaminated soil or contaminated ground or surface water. Contaminants associated with wind blown dust can affect humans on surrounding sites.

VEGETATION

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, lead, nickel, and zinc.

To establish if the levels of contaminants present on a site may pose a risk to vegetation the results of the contamination testing are compared to a series of threshold values published in 'Code of Good Agricultural Practice for the Protection of Soil'.

GROUNDWATER AND SURFACE WATER RECEPTORS

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology. Surface watercourses may also accumulate contamination as contaminated sediments are deposited within the water body.

Where the site investigated overlies major/principal aquifers (and in some cases minor/secondary aquifers depending on certain conditions), groundwater Source Protection Zones and areas in close proximity to groundwater abstractions, contamination test results have been compared with the Water Supply (Water Quality) Regulations 1989 and The Water Supply (Water Quality) Regulations 2000.

Should a surface water receptor, such as a fresh water environment (river, canal, stream, lake etc), or marine environment be considered sensitive in relation to a site, then test results are compared with DEFRA & SEPA Environmental Quality Standards (2004). Many of the Environmental Quality Standards are hardness (CaCO_3) depended. Where no hardness values are available, Solmek assume conservative values (of between 0 and 50mg/l).

In the absence of vulnerable ground and surface water environments, Solmek may compare any test results with the Environment Agency Leachate Quality Threshold Values.

DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

In line with Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*, a DQRA for groundwater/human health may be required following a Phase 2 investigation and before the preparation of a Phase 3 Remediation Strategy. For human health DQRA, a site specific assessment criteria is undertaken using CLEA Software Version 1.06. For groundwater DQRA, the Environment Agency Remedial Targets Worksheet Version 3.1 is used.

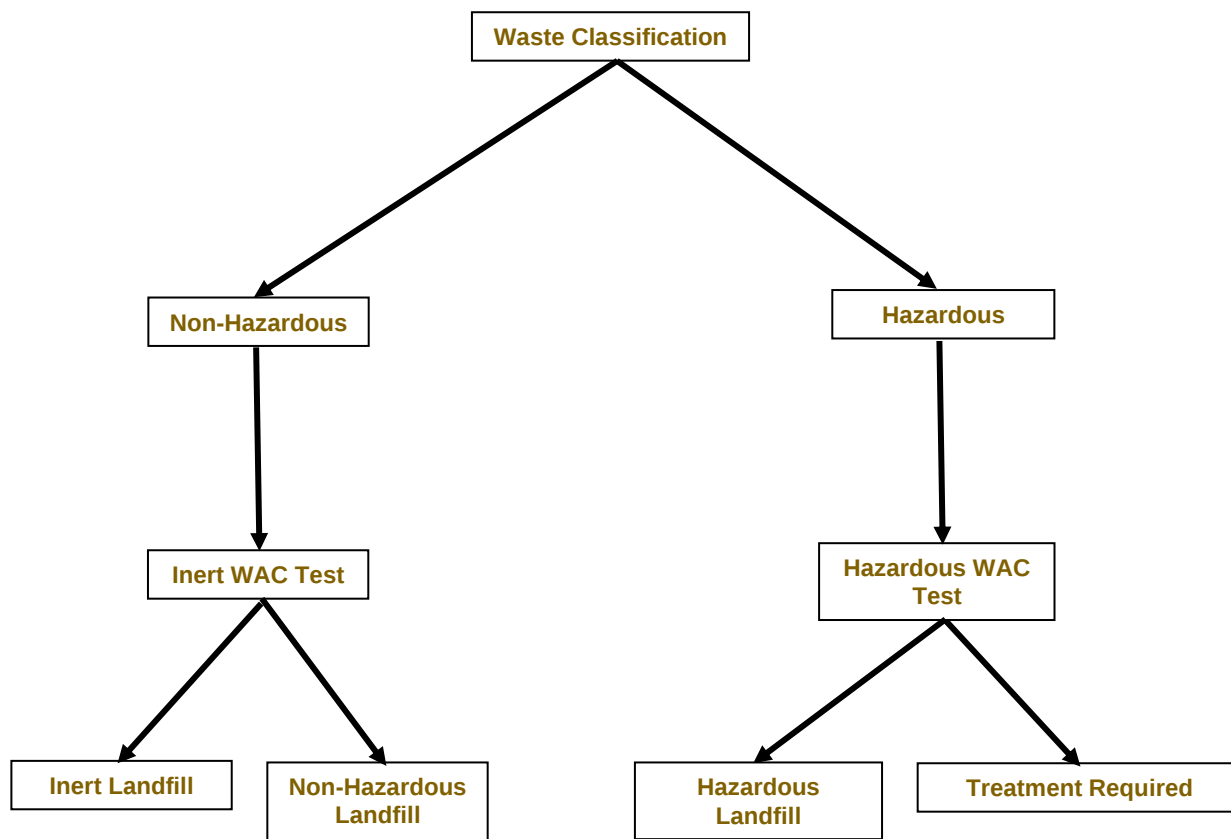
WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste (2015)*. This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste. The WAC testing relates to materials that are to be exported from a site/development to landfill, and do not directly relate to human health specifically. The testing results are generally presented as certificates which can be used by site owners/contractors etc, which should be presented to the accepting waste facility or waste contractor.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

The below flow chart provides further information on the waste classification process.



CONSTRUCTION MATERIALS

Materials at risk from possible soil contaminants include inorganic matrices such as cement and concrete and also organic material such as plastics and rubbers. Acid ground conditions and high levels of sulphates can accelerate the corrosion of building materials. Where pH and soluble sulphate analysis has been undertaken, Solmek compare the test results with the guidelines presented within BRE Special Digest 1, 2005 (3rd Edition) 'Concrete in Aggressive Ground'. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication "Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites" (January 2011). A Brownfield Site is defined in the document as "Land or premises that have not previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer. The table below outlines the pipe material selection threshold concentrations.

Parameter group	Pipe Material (Threshold concentrations in mg/kg)					
	PE	PVC	Barrier pipe (PE-AL-PE)	Wrapped Steel	Wrapped Ductile Iron	Copper
Extended VOC suite by purge and trap or head space and GC-MS with TIC	0.5	0.125	Pass	Pass	Pass	Pass
+ BTEX + MTBE	0.1	0.03	Pass	Pass	Pass	Pass
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C5-C10)	2	1.4	Pass	Pass	Pass	Pass
+ Phenols	2	0.4	Pass	Pass	Pass	Pass
+ Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
Mineral oil C11-C20	10	Pass	Pass	Pass	Pass	Pass
Mineral oil C21-C40	500	Pass	Pass	Pass	Pass	Pass
Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5, Eh not neutral and conductivity >400µS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suite identified as relevant following site investigation						
Ethers	0.5	1	Pass	Pass	Pass	Pass
Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
Ketones	0.5	0.02	Pass	Pass	Pass	Pass
Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
Amines	Fail	Pass	Pass	Pass	Pass	Pass

REQUIREMENTS OF PARTIES WITHIN THE DEVELOPMENT PROCESS

Interested parties involved in the development process may use the data in different ways and there may be varying views and interpretation of the factual data. Local Authority staff may have a view on contamination and human health and the wider environment. The Environment Agency are concerned principally with the protection of Controlled waters. Building insurers, funders and purchasers may be primarily concerned with issues of potential commercial blight. Purchasers are also not always fully informed, and perceptions on issues associated with risk can affect the decision to purchase. Developers and construction organisations will focus on financial aspects of dealing with the contamination in the context of the development and construction programme.

RISKS & LIABILITIES FROM CONTAMINATION

In simple terms, risks associated with contamination may be considered in terms of 1) statutory risks and 2) development related risks. If contamination is severe or forms a potential hazard based on its potential to affect groundwater, surface water or human health, a statutory risk may be present, and as such, if the risk is not reduced, criminal proceedings may be instigated by a government body or local authority.

If the contamination is less severe or not considered to be mobile, it may be considered a commercial liability which could, in theory remain untreated, but which may at a later date affect the value of the property, or, with changing legislation, become a statutory risk. Commercial liabilities could give rise to civil proceedings by third parties if there are grounds for action.

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2022)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2011 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.