

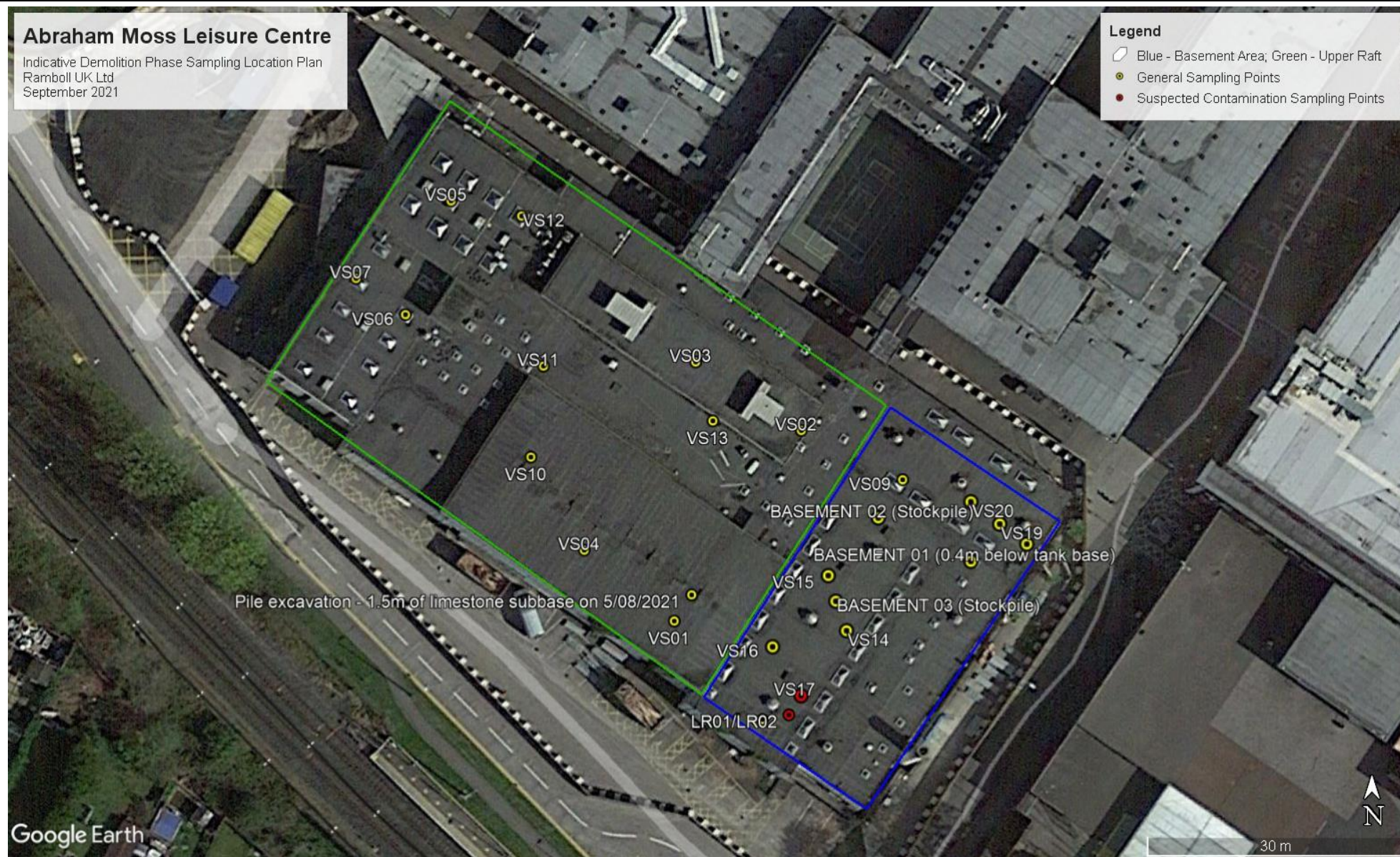
Copyright: All rights reserved.
This drawing must not be reproduced without permission.
This drawing must not be scaled. Dimensions are in millimetres unless specified



P02	20.02.20	PLANNING UPDATE		NA	MPK
P01	01.10.19	PLANNING ISSUE		NA	MPK
REV	DATE	REVISION NOTE		BY	CHECK

Abraham Moss Leisure Centre

Indicative Demolition Phase Sampling Location Plan
Ramboll UK Ltd
September 2021



RAMBOLL

1 Broad Gate, Leeds, LS1 8EQ
leeds@ramboll.co.uk
T: 0113 245 7552

Project: Abraham Moss Leisure Centre

Status:

Description: Site Location Plan

Date: Sep 21

Title:
Demolition Phase Ground Investigation
Location Plan

Scale: NTS

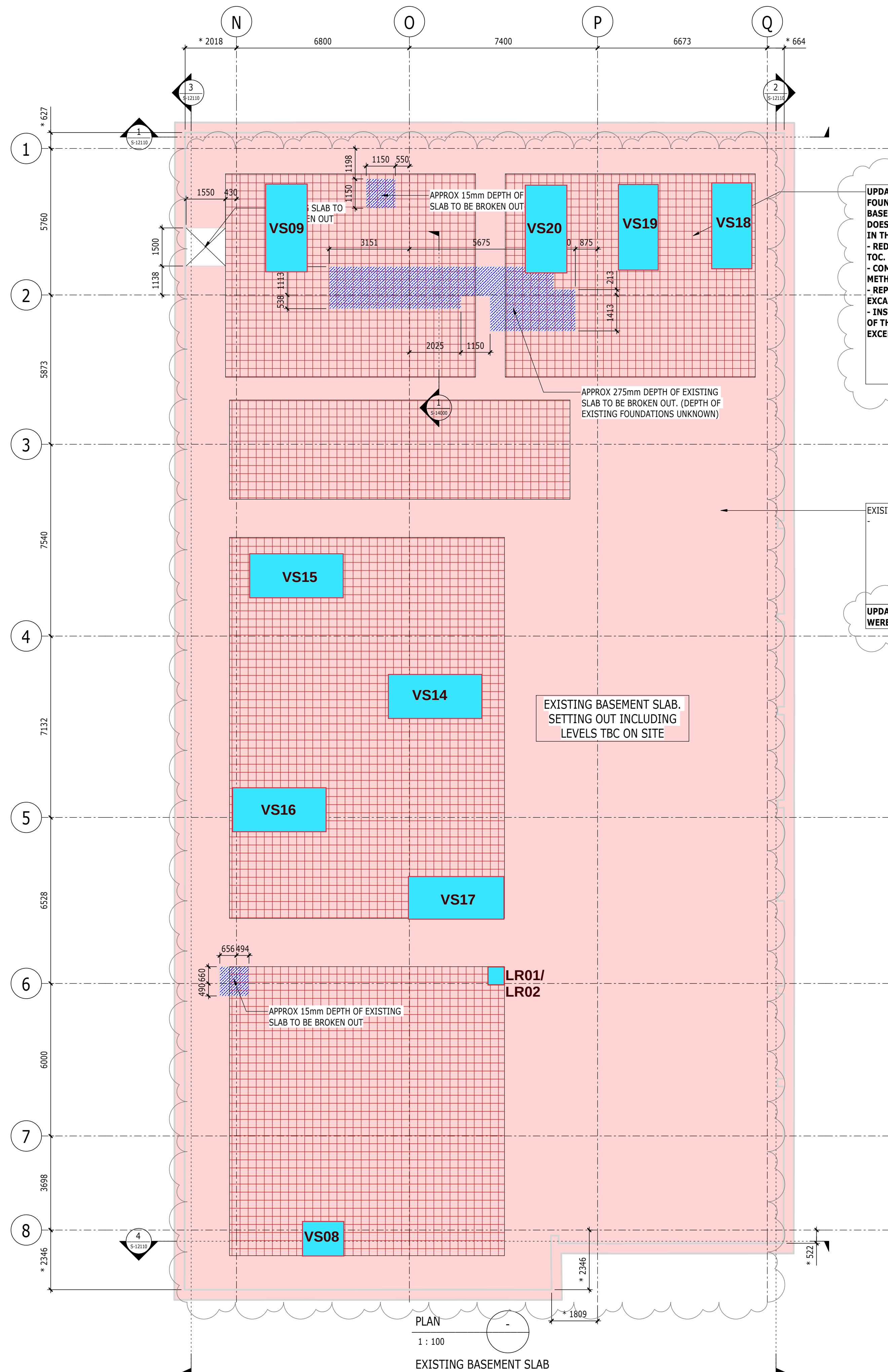
Date: Sep 21

Drawn: VG

Checked: HC

Figure: 1

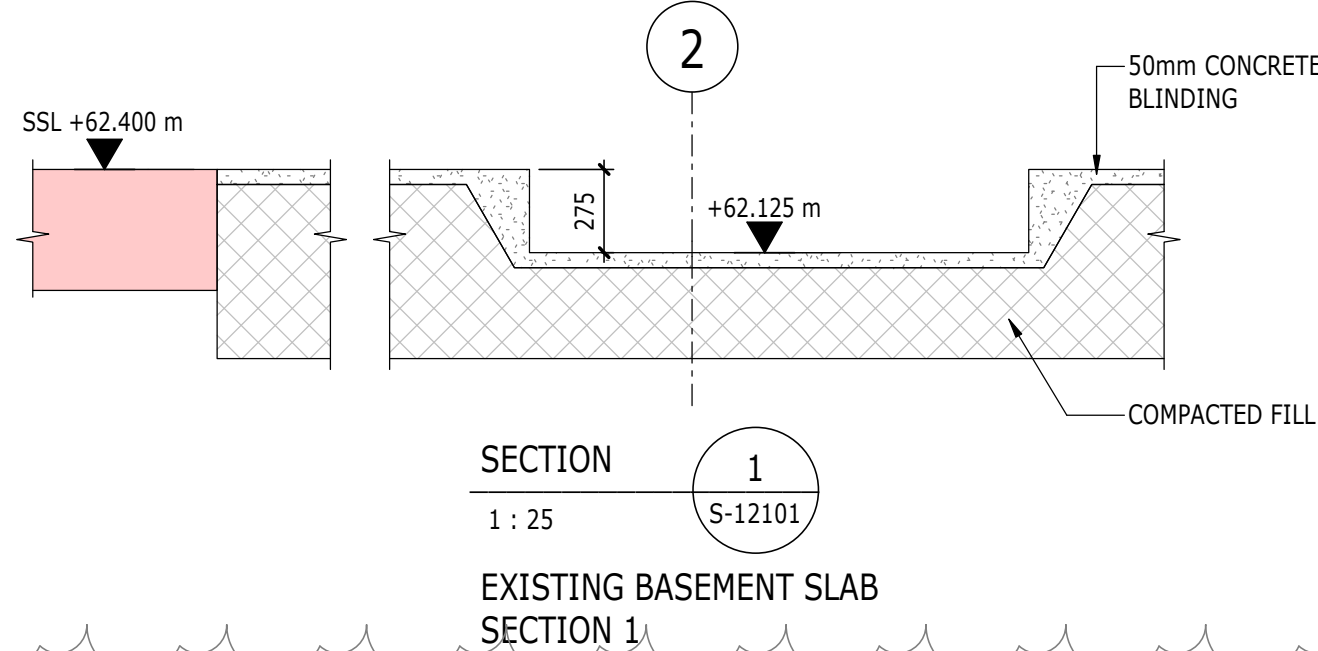
Rev: -



* SETTING OUT DIMENSIONS TO EXISTING STRUCTURE TBC ON SITE. ANY DISCREPANCIES TO BE REPORTED BACK TO THE STRUCTURAL ENGINEER

UPDATE - DURING DEMOLITION PHASE, THE OLD BASEMENT WAS FOUND TO BE A FOLDED SLAB CONSTRUCTION THAT FORMED THE BASE OF THE OLD SWIMMING POOLS. THERE BASEMENT SLAB DOES NOT EXIST IN THE HATCHED AREAS INDICATED. IN THESE AREAS THE GROUND IS TO BE PREPARED :
- REDUCE LEVEL TO APPROX. 50mm BELOW EXISTING BASEMENT TOC.
- COMPACT THE OLD FILL WITH A WACKER PLATE OR SIMILAR METHOD.
- REPLACE ANY SOFT SPOTS IN LINE WITH THE RAMBOLL EXCAVATION & FILLING SPEC.
- INSTALL A CONCRETE BLINDING LAYER TAKE THE LEVEL OF THESE PATCHES TO THE SAME AS THE MAIN BASEMENT TOC EXCEPT FOR THE AREAS MARKED IN BLUE

EXISTING BASEMENT - TEMPORARY CASE IN ORDER TO AVOID POTENTIAL BUOYANCY DUE TO HIGH GROUND WATER WHEN THE EXISTING BUILDING AND POOLS ARE REMOVED, CORE HOLES TO BE FORMED AND ANY INCOMING GROUND WATER TO BE MANAGED BY THE CONTRACTOR.
150mm DIAMETER CORES TO BE CORED THROUGH EXISTING BASEMENT WALL, 225mm ABOVE BASEMENT (TO CENTRELINE) AROUND FULL PERIMETER AT 5m CENTRES
UPDATE - DURING DEMOLITION PHASE, THESE PENETRATIONS WERE FOUND TO BE NO LONGER REQUIRED



A1	⚠	APPROPRIATE WORK CONTROLS TO BE IMPLEMENTED TO MINIMIZE RISK OF STRIKING EXISTING SERVICES
A2	🚫	NO DEEP EXCAVATIONS ADJACENT TO SITE BOUNDARY
B1	⚠	APPROPRIATE WORK CONTROLS TO BE IMPLEMENTED DURING SITE CLEARANCE EXCAVATIONS
B7	⚠	POOR CONDITION OF EXISTING DRAINAGE TAKEN INTO ACCOUNT
C1	⚠	RISK OF EXPOSURE TO UNEXPECTED HAZARDOUS MATERIALS DURING SITE CLEARANCE
C2	🚫	REFER TO RAMBOLL REMEDIAL STATEMENT & ENVIRONMENTAL SPECIFICATION FOR SPECIFIC PRECAUTIONS TO BE TAKEN
C3	🚫	REFER TO RAMBOLL REMEDIAL STATEMENT & ENVIRONMENTAL SPECIFICATION FOR SPECIFIC PRECAUTIONS TO BE TAKEN

THESE NOTES ARE BASED ON THE USE OF EXPERIENCED AND COMPETENT CONTRACTORS CARRYING OUT THE WORK USING AN APPROVED SAFE METHOD OF WORKING

KEY TO HEALTH AND SAFETY SYMBOLS

- 🔵 INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION
- 📌 INDICATES A RESIDUAL RISK FOR INFORMATION
- 🚫 INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION
- ⚠ INDICATES A RESIDUAL RISK AS A WARNING

COPYRIGHT RAMBOLL UK LIMITED. ALL RIGHTS RESERVED. THIS DOCUMENT IS ISSUED FOR THE PARTY WHO COMMISSIONED IT AND FOR THE SPECIFIC PURPOSES CONNECTED WITH THE PROJECT ONLY. IT SHOULD NOT BE RELIED UPON BY ANY OTHER PARTY OR USED FOR ANY OTHER PURPOSE. RAMBOLL ACCEPTS NO RESPONSIBILITY OR LIABILITY WHICH MAY ARISE FROM RELIANCE OR USE OF THIS DOCUMENT OR THE DATA CONTAINED HEREIN BY ANY OTHER PARTY OR FOR ANY OTHER PURPOSE.

- NOTES
- DO NOT SCALE FROM THIS DRAWING.
 - ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
 - ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS
 - FOR GENERAL NOTES REF TO DRAWING LP44107-RAM-ZZZ-ZZ-DR-S-00010.

Location of trial pit - August and September 2021

C02	DRAWING UPDATED TO SUIT ON SITE CONDITIONS	02.07.2021	JC	NM
C01	CONSTRUCTION ISSUE	23.03.2021	JC	NM
P01	STAGE 4 ISSUE	22.11.2019	JC	NM
Rev	Description	Date	By	App

CONSTRUCTION ISSUE - D3

ABRAHAM MOSS
LIBRARY & LEISURE CENTRE

RAMBOLL

tel 0161 827 1890 manchester@ramboll.co.uk
www.ramboll.co.uk

EXISTING BASEMENT SLAB REMEDIAL WORKS

Project No:	Scale (@ A1):	Date:	Drawn:
1620005164	1:100		
Drawing No:		Rev:	

FIGURE 2

APPENDIX B– FIELD DESCRIPTIONS OF SOILS

Abraham Moss Demolition Phase Ground Investigation Records 2021					
9th June 2021					
BASEMENT-01	Depth from	Depth to	Description	Sampled depth	PID
	0.00	0.10	MADE GROUND: Grey and brown sandy fine to coarse and frequently cobble-sized angular to sub-angular gravel of brick and concrete [Recent	-	-
	0.10	0.50	MADE GROUND: Grey and brown to black gravelly sandy silty CLAY with fine to coarse angular to sub-angular gravel of brick, mudstone, rare clinker and rare wood fragments. Occasional pockets of fine sand.	0.40-0.50	0.9ppm at 0.45m
BASEMENT-02	Stockpile Sample		MADE GROUND: Grey and brown slightly clayey sandy sub-angular fine to coarse GRAVEL of brick, concrete and limestone. Occasional metal fragments with rare clinker and coal.	Composite sample(s) from between 0.2 and 0.5m below surface of stockpile.	
BASEMENT-03	Stockpile Sample		MADE GROUND: Grey and brown slightly clayey sandy sub-angular fine to coarse GRAVEL of brick, concrete and limestone. Occasional metal fragments with rare clinker and coal.		
27th July 2021					
VS01	Depth from	Depth to	Description	Sampled depth	PID
	0.00	0.50	MADE GROUND: Brown sandy fine to coarse and frequently cobble-sized angular to sub-angular gravel of brick, mudstone and coal. Rare iron nail and glass fragments.	0.3 - 0.5m	7.7ppm at 0.3m
	0.50	1.60	MADE GROUND: Yellow brown and grey very gravelly clay with angular to sub-angular fine to coarse gravel of limestone. (SUB-BASE).		2.4ppm at 1.4m
VS02	0.00	1.50	MADE GROUND: Orange stained black organic rich slightly gravelly slightly clayey fine to coarse sand with fine to coarse angular to sub-angular gravel of coal, rare glass and degraded rootlets.		9.3ppm at 0.4m
	1.50	1.80	Soft to firm very dark brown to black slightly gravelly slightly sandy CLAY with fine to medium angular to sub-angular gravel of coal and mudstone.	1.5 - 1.8m	6.2ppm at 1.5m
	1.80	1.90	Very soft to soft reddish brown organic rich slightly sandy CLAY with frequent roots.		5.7ppm at 1.8m
VS03	0.00	1.40	MADE GROUND: Light orange grey clayey fine to coarse and frequently cobble-sized angular to sub-angular gravel of brick, limestone and concrete.	0.4 - 0.5m	3.4ppm at 0.5m
	1.40	1.80	Soft to firm very dark brown to black slightly gravelly slightly sandy CLAY with fine to medium angular to sub-angular gravel of coal and mudstone.		11.3ppm at 1.4m
	1.80	1.85	Soft brown very organic slightly sandy CLAY. Sand is fine.		3.7ppm at 1.8m
VS04	0.00	0.40	MADE GROUND: Stiff to firm orange yellow gravelly CLAY with fine to coarse angular to sub-angular gravel of limestone. (SUB-BASE)	0.1 - 0.4m	2.1ppm at 0.4m
	0.40	0.90	MADE GROUND: Brown very gravelly fine to coarse sand with very frequent half and whole bricks, mudstone, quartz.		2.1ppm at 0.7m
	0.90	1.30	MADE GROUND: Stiff to firm orange yellow gravelly CLAY with fine to coarse angular to sub-angular gravel of limestone. (SUB-BASE)		
	1.30	1.60	MADE GROUND: Brown very gravelly fine to coarse sand fine to coarse and cobble-sized angular gravel of brick. (BRICK FILL)		
	1.60	1.65	Soft to firm very dark brown to black slightly gravelly slightly sandy CLAY with fine to medium angular to sub-angular gravel of coal.		16.8ppm at 1.6m
VS05	0.00	0.30	MADE GROUND: Firm to stiff yellow orange grey clay with fine to coarse angular to sub-angular gravel of brick, concrete, mudstone. Underlain by textile.		3.4ppm at 0.3m
	0.30	1.00	Orange brown fine to coarse SAND. Turning grey from 0.7m	0.3 - 0.35m	12.6ppm at 1.0m
VS06	0.00	0.30	Soft to firm orange speckled black gravelly CLAY. Gravel is fine angular of coal.	0.2 - 0.30m	2.4ppm at 0.3m
	0.30	1.20	Yellow and grey fine to coarse SAND. Water seepage at base (~1.2m)		
VS07	0.00	1.50	Orange grey brown slightly gravelly fine to coarse SAND with fine to medium angular to sub-angular gravel of natural lithologies. Interbedded with grey brown speckled black fine to coarse SAND. Speckles likely of coal.	0.40 - 0.50m	3.5ppm at 0.6m
5th August 2021					
LR01/LR02	0.00	0.40	CONCRETE SLAB / LOWER BASEMENT RAFT APPROX. 400mm THICK OVERLYING MG		
	0.40	0.80	MADE GROUND: Grey very clayey gravelly fine to coarse SAND with fine to coarse angular to sub-angular gravel of brick, concrete, coal, mudstone and frequently whole brick cobbles. Sample recovered wet with a slight oily / iridescent sheen. Moderate hydrocarbon odour. Note: sample depth of laboratory sheet states 0.3-0.4 but this does not account for 400mm of overlying concrete slab.	0.30 m and 0.40m	373ppm
VS08	0.60	0.60	Red brown to dark brown organic rich sandy CLAY which is compressible with high organic content such as branches. Sand is fine.	0.6m	5.5ppm
VS09	0.00	0.50	MADE GROUND: Soft very dark brown to black very gravelly sandy CLAY with fine to coarse angular to sub-angular gravel of brick, mudstone and rare wood fragments. Occasional pockets of fine sand and roots. Mild organic odour.	0.4 - 0.5m	11.6ppm
VS10	0.00	1.00	MADE GROUND: Light brown and red very gravelly fine to coarse SAND with fine to coarse angular to sub-angular gravel of brick, mudstone, concrete. Frequent whole bricks and rare tile and iron parts.	0.7 - 0.8m	6.0ppm
VS11	1.00	1.10	Firm very dark brown sandy CLAY. Sand is fine		
	0.00	0.70	MADE GROUND: Light brown and red very gravelly fine to coarse SAND with fine to coarse angular to sub-angular gravel of brick, mudstone, concrete. Frequent whole bricks and rare tile and iron parts.		
	0.70	0.85	Firm very dark brown mottled brown sandy CLAY with mild organic odour and occasional roots.	0.7 - 0.8m	11.9ppm
VS12	0.85	1.10	Light grey to grey blue fine to medium SAND.		
	0.00	0.25	Firm very dark brown to black mottled brown organic rich sandy CLAY with mild organic odour and occasional roots.		
VS13	0.25	1.00	Light grey fine to medium SAND.	0.5 - 0.6m	1.4ppm
	0.00	0.80	MADE GROUND: Stiff grey very sandy slightly gravelly CLAY with fine to coarse angular to sub-angular gravel of brick, limestone and coal. Mild organic odour.	0.6 - 0.7m	9.9ppm
7th September 2021					
VS14	0.00	0.30	MADE GROUND: Light brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized angular to sub-angular of limestone and brick.		
	0.30	0.60	MADE GROUND: Dark brown to black slightly clayey very gravelly fine to coarse SAND. Gravel is fine to coarse and frequently cobble-sized of brick, wood, concrete, limestone, shale and tile. Rare to occasional rebar and wooden planks. Underlain by a textile. Mild hydrocarbon odour.	0.4 - 0.6m	33.4ppm at 0.5m
	0.60	1.00	Soft orangish brown silty organic rich clay with frequent wood and bark.		
	1.00	1.30	Light grey speckled black clayey fine SAND.		
VS15	0.00	0.20	MADE GROUND: Light brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized angular to sub-angular of limestone and brick.		
	0.20	0.40	MADE GROUND: Dark brown to black slightly clayey very gravelly fine to coarse SAND. Gravel is fine to coarse and frequently cobble-sized of brick, wood, concrete, limestone, shale and tile. Rare to occasional rebar and wooden planks. Underlain by a textile.		4.9ppm at 0.3m
	0.40	0.80	Soft orangish brown silty organic rich clay with frequent wood and bark.		
VS16	0.00	0.30	MADE GROUND: Light brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized angular to sub-angular of limestone and brick.		
	0.30	1.00	MADE GROUND: Dark brown to black slightly clayey very gravelly fine to coarse sand. Gravel is fine to coarse and frequently cobble-sized of brick, wood, concrete, limestone, shale and tile. Rare to occasional rebar and wooden planks. Underlain by a textile.		0.6ppm at 0.5m
	1.00	1.10	Light grey speckled black fine SAND.		0.0ppm at 1.0m
VS17	0.00	0.40	CONCRETE SLAB / LOWER BASEMENT RAFT APPROX. 400mm THICK OVERLYING MG		
	0.40	0.80	MADE GROUND: Grey very clayey gravelly fine to coarse SAND with fine to coarse angular to sub-angular gravel of brick, concrete, coal, mudstone and frequently whole brick cobbles. Sample recovered damp with a slight oily / iridescent sheen. Mild hydrocarbon odour. Note: sample recovered directly underneath the concrete slab.	0.4 - 0.5m	67.5ppm at 0.4m; 1.3ppm at 0.6m
	0.80	1.00	Soft orangish brown silty organic rich clay with frequent wood and bark.		
VS18	0.00	0.50	MADE GROUND: Light to dark brown very gravelly clayey fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized of brick, concrete and tile. Occasional to frequent wooden planks/beams. Frequent whole bricks. Concrete slab on SE wall (400mm) further underlain by concrete (~200mm). Wooden beam along the SE wall with organic rich soft brown sandy clay.		1.6ppm
	0.50	0.60	Light grey speckled black clayey fine SAND.		0.1ppm
VS19	0.00	0.50	MADE GROUND: Light to dark brown very gravelly clayey fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized of brick, concrete and tile. Occasional to frequent wooden planks/beams. Frequent whole bricks. Rare plastic sheeting and metal barrier. Slight groundwater seepage. No visual or olfactory evidence of contamination within groundwater.		1.2ppm at 0.1m
	0.50	0.60	Light grey speckled black clayey fine SAND.		0.8ppm at 0.5m
VS20	0.00	0.50	MADE GROUND: Light to dark brown very gravelly clayey fine to coarse SAND. Gravel is fine to coarse and occasionally cobble-sized of brick, concrete, tile and wooden planks. Frequent whole bricks and occasional rebar.		6.0ppm at 0.1ppm
	0.50	0.70	Light grey speckled black clayey fine SAND.		0.6ppm at 0.5m

APPENDIX C– LABORATORY ANALYTICAL RESULTS

Chris Dawson
Ramboll UK
240 Blackfriars Road
London
SE1 8NW

t: 0207 631 5291

e: chris.dawson@ramboll.co.uk

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 21-80401

Project / Site name:	Abraham Moss	Samples received on:	10/06/2021
Your job number:	1620005167	Samples instructed on/ Analysis started on:	10/06/2021
Your order number:	1620041417	Analysis completed by:	17/06/2021
Report Issue Number:	1	Report issued on:	17/06/2021
Samples Analysed:	3 soil samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-80401
Project / Site name: Abraham Moss
Your Order No: 1620041417

Lab Sample Number				1899344	1899345	1899346
Sample Reference				BASEMENT 01	BASEMENT 02	BASEMENT 03
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				09/06/2021	09/06/2021	09/06/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	13	12
Total mass of sample received	kg	0.001	NONE	1.7	1.5	1.5

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
------------------	------	-----	-----------	--------------	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.8	9.1	9.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	210	1000	770
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.11	0.52	0.38

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.23	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.37	1.5	0.83
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.36	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.32	2.4	1.0
Pyrene	mg/kg	0.05	MCERTS	0.29	2.4	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.5	0.58
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.1	0.44
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.5	0.62
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.57	0.20
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.3	0.47
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.54	0.23
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.19	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.71	0.26

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	0.98	14.6	5.61
-----------------------------	-------	-----	--------	------	------	------

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.6	8.4	7.8
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.55	0.56	0.57
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	2.2	2.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.5	0.4
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	13	12	11
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	13	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	21	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	98	73
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	13	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	17	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	70	64

Analytical Report Number: 21-80401
 Project / Site name: Abraham Moss
 Your Order No: 1620041417

Lab Sample Number				1899344	1899345	1899346
Sample Reference				BASEMENT 01	BASEMENT 02	BASEMENT 03
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				09/06/2021	09/06/2021	09/06/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.8	7.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	14	10
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	40	25
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	61	42

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	14	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	26	15
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	12	40	23

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

Analytical Report Number : 21-80401

Project / Site name: Abraham Moss

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1899344	BASEMENT 01	None Supplied	None Supplied	Brown loam and clay with gravel.
1899345	BASEMENT 02	None Supplied	None Supplied	Brown loam and clay with gravel.
1899346	BASEMENT 03	None Supplied	None Supplied	Brown loam and clay with gravel.

Analytical Report Number : 21-80401

Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

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

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

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



Analytical Report Number : 21-80401
Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
----------------------	-------------------------------	-----------------------------	---------------	--------------------	----------------------

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

Chris Dawson
Ramboll UK
1 Broad Gate
The Headrow Leeds
LS1 8EQ

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

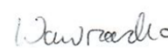
t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: chris.dawson@ramboll.co.uk

Analytical Report Number : 21-89666

Project / Site name:	Abraham Moss - Slab Removal	Samples received on:	28/07/2021
Your job number:	1620005164-001	Samples instructed on/ Analysis started on:	28/07/2021
Your order number:	1620041417	Analysis completed by:	03/08/2021
Report Issue Number:	1	Report issued on:	03/08/2021
Samples Analysed:	7 soil samples		

Signed:



Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-89666
Project / Site name: Abraham Moss - Slab Removal
Your Order No: 1620041417

Lab Sample Number				1954351	1954352	1954353	1954354	1954355
Sample Reference				VS02	VS01	VS04	VS03	VS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50-1.80	0.20-0.30	0.10-0.40	0.40-0.50	0.40-0.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	23	11	8.4	5.8	20
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.4	1.5

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
------------------	------	-----	-----------	--------------	--------------	--------------	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.2	8.3	7.9	9.4	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	140	4400	2200	2700	89
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.069	2.2	1.1	1.4	0.044
Total Organic Carbon (TOC)	%	0.1	MCERTS	4.3	-	-	-	-

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.91	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	8.8	0.31	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	5.9	0.17	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	58	2.4	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	13	0.47	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	100	3.1	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	88	2.9	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	52	1.5	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	51	1.5	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	51	1.5	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	30	0.63	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	49	1.3	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	20	0.66	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	6.1	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	22	0.79	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	557	17.2	< 0.80	< 0.80	< 0.80
-----------------------------	-------	-----	--------	-----	------	--------	--------	--------

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	35	9.9	16	7.3	2.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.6	0.53	1.6	0.74	0.54
Boron (water soluble)	mg/kg	0.2	MCERTS	3.8	1.1	0.4	0.5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.9	0.7	5.8	2.2	0.4
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	28	13	11	10	8.4
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	14	11	10	8.7
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	37	27	18	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	410	680	80	7.6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	12	40	20	9.0
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	45	19	17	13	11
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	470	170	880	140	19

Analytical Report Number: 21-89666

Project / Site name: Abraham Moss - Slab Removal

Your Order No: 1620041417

Lab Sample Number				1954351	1954352	1954353	1954354	1954355
Sample Reference				VS02	VS01	VS04	VS03	VS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50-1.80	0.20-0.30	0.10-0.40	0.40-0.50	0.40-0.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	14	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	270	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	330	15	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	660	24	< 10	< 10	< 10

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-

Analytical Report Number: 21-89666

Project / Site name: Abraham Moss - Slab Removal

Your Order No: 1620041417

Lab Sample Number				1954351	1954352	1954353	1954354	1954355
Sample Reference				VS02	VS01	VS04	VS03	VS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50-1.80	0.20-0.30	0.10-0.40	0.40-0.50	0.40-0.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-

Analytical Report Number: 21-89666

Project / Site name: Abraham Moss - Slab Removal

Your Order No: 1620041417

Lab Sample Number				1954351	1954352	1954353	1954354	1954355
Sample Reference				VS02	VS01	VS04	VS03	VS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50-1.80	0.20-0.30	0.10-0.40	0.40-0.50	0.40-0.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	0.31	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	0.17	-	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	2.4	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	0.47	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	3.1	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	-	2.9	-	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.5	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	1.5	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1.5	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.63	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.3	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.66	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.79	-	< 0.05	-

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

Analytical Report Number: 21-89666
 Project / Site name: Abraham Moss - Slab Removal
 Your Order No: 1620041417

Lab Sample Number				1954356	1954357
Sample Reference				VS05	VS06
Sample Number				None Supplied	None Supplied
Depth (m)				0.30-0.35	0.20-0.30
Date Sampled				27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.4	20
Total mass of sample received	kg	0.001	NONE	1.5	1.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected
------------------	------	-----	-----------	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	340	590
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.29
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-

Total Phenols

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

Speciated PAHs

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

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80
-----------------------------	-------	-----	--------	--------	--------

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.2	7.5
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.28	0.40
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	8.3	22
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8.3	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.9	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	17	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.4	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	7.4	27
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	42

Analytical Report Number: 21-89666
 Project / Site name: Abraham Moss - Slab Removal
 Your Order No: 1620041417

Lab Sample Number				1954356	1954357
Sample Reference				VS05	VS06
Sample Number				None Supplied	None Supplied
Depth (m)				0.30-0.35	0.20-0.30
Date Sampled				27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-
Chloroethane	µg/kg	1	NONE	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-
1,1-Dichloroethane	µg/kg	1	NONE	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-
Benzene	µg/kg	1	MCERTS	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-

Analytical Report Number: 21-89666

Project / Site name: Abraham Moss - Slab Removal

Your Order No: 1620041417

Lab Sample Number				1954356	1954357
Sample Reference				VS05	VS06
Sample Number				None Supplied	None Supplied
Depth (m)				0.30-0.35	0.20-0.30
Date Sampled				27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Toluene	µg/kg	1	MCERTS	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-
Styrene	µg/kg	1	MCERTS	-	-
Tribromomethane	µg/kg	1	NONE	-	-
o-Xylene	µg/kg	1	MCERTS	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-

Analytical Report Number: 21-89666

Project / Site name: Abraham Moss - Slab Removal

Your Order No: 1620041417

Lab Sample Number				1954356	1954357
Sample Reference				VS05	VS06
Sample Number				None Supplied	None Supplied
Depth (m)				0.30-0.35	0.20-0.30
Date Sampled				27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
4-Chloroaniline	mg/kg	0.1	NONE	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-

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

Analytical Report Number : 21-89666

Project / Site name: Abraham Moss - Slab Removal

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1954351	VS02	None Supplied	1.50-1.80	Brown clay and sand.
1954352	VS01	None Supplied	0.20-0.30	Brown loam and sand with gravel and brick.
1954353	VS04	None Supplied	0.10-0.40	Brown clay and sand with gravel.
1954354	VS03	None Supplied	0.40-0.50	Brown clay and sand with gravel.
1954355	VS07	None Supplied	0.40-0.50	Brown sand.
1954356	VS05	None Supplied	0.30-0.35	Brown sand.
1954357	VS06	None Supplied	0.20-0.30	Brown clay.

Analytical Report Number : 21-89666

Project / Site name: Abraham Moss - Slab Removal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS



Analytical Report Number : 21-89666
Project / Site name: Abraham Moss - Slab Removal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
----------------------	-------------------------------	-----------------------------	---------------	--------------------	----------------------

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
 For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
 Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Viktoriya Grygoryshchak

Ramboll UK
1 Broad Gate
The Headrow Leeds
LS1 8EQ

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: viktoriya.grygoryshchak@ramboll.co.uk

Analytical Report Number : 21-91776

Project / Site name:	Abraham Moss	Samples received on:	06/08/2021
Your job number:	1620005164-001	Samples instructed on/ Analysis started on:	06/08/2021
Your order number:	K020041417	Analysis completed by:	12/08/2021
Report Issue Number:	1	Report issued on:	12/08/2021
Samples Analysed:	8 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-91776
Project / Site name: Abraham Moss
Your Order No: K020041417

Lab Sample Number				1966117	1966118	1966119	1966120	1966121
Sample Reference				LR01	LR02	VS09	VS10	VS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.40	0.40-0.50	0.70-0.80	0.70-0.80
Date Sampled				05/08/2021	05/08/2021	05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	-	< 0.1
Moisture Content	%	0.01	NONE	25	22	25	-	21
Total mass of sample received	kg	0.001	NONE	1.5	1.6	1.4	-	1.3

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected	-
------------------	------	-----	-----------	---	---	--------------	--------------	---

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.9	9.9	9.7	-	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.091	0.17	0.24	-	0.098
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	180	330	470	-	200
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	90.9	167	236	-	97.9
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	0.68
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	0.47
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	3.4
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	3.0
Phenanthrene	mg/kg	0.05	MCERTS	2.8	2.6	0.98	-	21
Anthracene	mg/kg	0.05	MCERTS	0.59	0.55	0.21	-	5.2
Fluoranthene	mg/kg	0.05	MCERTS	2.2	2.1	1.2	-	25
Pyrene	mg/kg	0.05	MCERTS	2.0	2.0	1.2	-	24
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.95	1.3	0.65	-	13
Chrysene	mg/kg	0.05	MCERTS	0.76	0.76	0.56	-	10
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.83	1.1	0.65	-	11
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.33	0.57	0.29	-	6.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.60	0.93	0.56	-	11
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.36	0.49	< 0.05	-	5.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	1.7
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.41	0.60	< 0.05	-	6.1

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	11.8	12.9	6.25	-	148
-----------------------------	-------	-----	--------	------	------	------	---	-----

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	7.3	9.1	-	22
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.55	0.59	0.63	-	1.4
Boron (water soluble)	mg/kg	0.2	MCERTS	4.7	1.9	5.2	-	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	0.8	0.6	-	1.1
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	-	< 1.2
Chromium (III)	mg/kg	1	NONE	11	12	17	-	28
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	12	18	-	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	19	18	-	65
Lead (aqua regia extractable)	mg/kg	1	MCERTS	250	200	93	-	180
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	1.0
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	15	18	-	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	18	21	-	35
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	100	80	-	160

Analytical Report Number: 21-91776
Project / Site name: Abraham Moss
Your Order No: K020041417

Lab Sample Number				1966117	1966118	1966119	1966120	1966121
Sample Reference				LR01	LR02	VS09	VS10	VS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.40	0.40-0.50	0.70-0.80	0.70-0.80
Date Sampled				05/08/2021	05/08/2021	05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	9.7	43	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	180	340	8.6	-	2.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	220	320	33	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	71	92	130	-	27
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	480	790	170	-	33

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	3.4	11	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	73	110	< 2.0	-	13
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	110	130	14	-	73
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	55	49	43	-	94
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	250	300	59	-	180

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

Analytical Report Number: 21-91776
Project / Site name: Abraham Moss
Your Order No: K020041417

Lab Sample Number				1966122	1966123	1966124
Sample Reference				VS12	VS13	VS08
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50-0.60	0.60-0.70	0.60
Date Sampled				05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.6	8.5	73
Total mass of sample received	kg	0.001	NONE	1.5	1.3	0.90

Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected
------------------	------	-----	-----------	---	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	7.6	8.0
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.013	0.042	0.52
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	25	83	1000
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	12.5	41.6	519
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	11

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.75	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	5.6	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	7.1	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	7.1	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	3.7	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	2.8	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.2	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.8	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	3.5	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.7	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.40	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.9	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	41.2	< 0.80
-----------------------------	-------	-----	--------	--------	------	--------

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.9	13	8.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.22	0.58	0.89
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.7	58
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.4	1.1
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	5.5	11	25
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.7	12	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.7	32	93
Lead (aqua regia extractable)	mg/kg	1	MCERTS	5.1	96	41
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.9	12	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	4.5	18	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	7.0	99	600

Analytical Report Number: 21-91776
 Project / Site name: Abraham Moss
 Your Order No: K020041417

Lab Sample Number				1966122	1966123	1966124
Sample Reference				VS12	VS13	VS08
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50-0.60	0.60-0.70	0.60
Date Sampled				05/08/2021	05/08/2021	05/08/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Monoaromatics & Oxygenates						
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	79
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	85

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	4.4	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	24	10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	32	89
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	60	99

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

Analytical Report Number : 21-91776

Project / Site name: Abraham Moss

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1966117	LR01	None Supplied	0.3	Brown clay and loam with gravel.
1966118	LR02	None Supplied	0.4	Brown silt with gravel.
1966119	VS09	None Supplied	0.40-0.50	Brown clay and loam.
1966121	VS11	None Supplied	0.70-0.80	Brown clay and loam.
1966122	VS12	None Supplied	0.50-0.60	Brown sand.
1966123	VS13	None Supplied	0.60-0.70	Brown loam and sand with gravel.
1966124	VS08	None Supplied	0.6	Brown loam with peat and vegetation.

Analytical Report Number : 21-91776

Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS



Analytical Report Number : 21-91776
Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
----------------------	-------------------------------	-----------------------------	---------------	--------------------	----------------------

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
 For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
 Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

**Viktoriya Grygoryshchak**

Ramboll UK
1 Broad Gate
The Headrow Leeds
LS1 8EQ

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: viktoriya.grygoryshchak@ramboll.co.uk

Analytical Report Number : 21-98148

Project / Site name:	Abraham Moss Leisure Centre	Samples received on:	09/09/2021
Your job number:	1620005164-001	Samples instructed on/ Analysis started on:	09/09/2021
Your order number:	1620041417	Analysis completed by:	14/09/2021
Report Issue Number:	1	Report issued on:	14/09/2021
Samples Analysed:	2 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-98148
Project / Site name: Abraham Moss Leisure Centre
Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	23	23
Total mass of sample received	kg	0.001	NONE	0.90	0.90

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected
------------------	------	-----	-----------	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.6	10.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.32	0.40

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.38
Fluorene	mg/kg	0.05	MCERTS	0.32	0.38
Phenanthrene	mg/kg	0.05	MCERTS	1.4	2.2
Anthracene	mg/kg	0.05	MCERTS	0.30	0.65
Fluoranthene	mg/kg	0.05	MCERTS	1.8	3.2
Pyrene	mg/kg	0.05	MCERTS	1.5	2.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.91	1.8
Chrysene	mg/kg	0.05	MCERTS	0.76	1.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.71	1.4
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.45	0.76
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.65	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.33	0.59
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.41	0.72

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	9.55	17.9
-----------------------------	-------	-----	--------	------	------

Analytical Report Number: 21-98148
 Project / Site name: Abraham Moss Leisure Centre
 Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)		Units	Limit of detection	Accreditation Status	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	7.0
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.48	0.55
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.4
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	15	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	200	37
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	15	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	66

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	2.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	17	17
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	44	41
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	43	110
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	100	170

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	7.6	8.8
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	28	25
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	55	66
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	91	100

Analytical Report Number: 21-98148
Project / Site name: Abraham Moss Leisure Centre
Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0

Analytical Report Number: 21-98148
 Project / Site name: Abraham Moss Leisure Centre
 Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0

Analytical Report Number: 21-98148
Project / Site name: Abraham Moss Leisure Centre
Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs

Aniline	mg/kg	0.1	NONE	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.38
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	0.38
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	2.2
Anthracene	mg/kg	0.05	MCERTS	-	0.65
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	3.2
Pyrene	mg/kg	0.05	MCERTS	-	2.6
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.8
Chrysene	mg/kg	0.05	MCERTS	-	1.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1.4
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.76
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1.4

Analytical Report Number: 21-98148
 Project / Site name: Abraham Moss Leisure Centre
 Your Order No: 1620041417

Lab Sample Number				2003849	2003850
Sample Reference				VS14	VS17
Sample Number				None Supplied	None Supplied
Depth (m)				0.40-0.60	0.40-0.50
Date Sampled				07/09/2021	07/09/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.59
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.72

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



Analytical Report Number : 21-98148
Project / Site name: Abraham Moss Leisure Centre

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2003849	VS14	None Supplied	0.40-0.60	Brown loam and sand with gravel and brick.
2003850	VS17	None Supplied	0.40-0.50	Brown clay and loam with gravel.

Analytical Report Number : 21-98148

Project / Site name: Abraham Moss Leisure Centre

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS



Analytical Report Number : 21-98148
Project / Site name: Abraham Moss Leisure Centre

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
----------------------	-------------------------------	-----------------------------	---------------	--------------------	----------------------

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
 For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
 Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Phil Studds
Ramboll UK
240 Blackfriars Road
London
SE1 8NW

t: 0207 631 5291

e: Phil.Studds@ramboll.co.uk

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

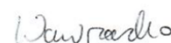
t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 21-85093

Project / Site name:	1620005167	Samples received on:	10/06/2021
Your job number:	ABRAHAM MOSS	Samples instructed on/ Analysis started on:	06/07/2021
Your order number:	1620041417	Analysis completed by:	12/07/2021
Report Issue Number:	1	Report issued on:	12/07/2021
Samples Analysed:	3 10:1 WAC samples		



Signed: _____

Joanna Wawrzeczek
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-85093							
					Client: RAMBOLL			
Location	1620005167							
Lab Reference (Sample Number)	1927461 / 1927462				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	09/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	BASEMENT 01							
Depth (m)								
Solid Waste Analysis								
TOC (%)**	1.4				3%	5%	6%	
Loss on Ignition (%) **	3.7				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	53				500	--	--	
Total PAH (WAC-17) (mg/kg)	26.1				100	--	--	
pH (units)**	8.3				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	6.0				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)		10:1		10:1	Limit values for compliance leaching test			
		mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	< 0.0010		< 0.0100	0.5	2	25		
Barium *	0.0112		0.0913	20	100	300		
Cadmium *	< 0.0001		< 0.0008	0.04	1	5		
Chromium *	< 0.0004		< 0.0040	0.5	10	70		
Copper *	0.0062		0.051	2	50	100		
Mercury *	< 0.0005		< 0.0050	0.01	0.2	2		
Molybdenum *	0.0018		0.0151	0.5	10	30		
Nickel *	0.0034		0.028	0.4	10	40		
Lead *	< 0.0010		< 0.010	0.5	10	50		
Antimony *	< 0.0017		< 0.017	0.06	0.7	5		
Selenium *	< 0.0040		< 0.040	0.1	0.5	7		
Zinc *	0.0032		0.026	4	50	200		
Chloride *	1.4		12	800	15000	25000		
Fluoride	0.083		0.68	10	150	500		
Sulphate *	34		280	1000	20000	50000		
TDS*	71		580	4000	60000	100000		
Phenol Index (Monohydric Phenols) *	< 0.010		< 0.10	1	-	-		
DOC	5.24		42.9	500	800	1000		
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.7							
Dry Matter (%)	86							
Moisture (%)	14							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.								
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation								
** = UKAS accredited (liquid eluate analysis only)								
** = MCFRTS accredited								

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	21-85093						
					Client: RAMBOLL		
Location	1620005167						
Lab Reference (Sample Number)	1927463 / 1927464				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	09/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BASEMENT 02						
Depth (m)							
Solid Waste Analysis							
TOC (%)**	2.0				3%	5%	6%
Loss on Ignition (%) **	4.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	110				500	--	--
Total PAH (WAC-17) (mg/kg)	6.16				100	--	--
pH (units)**	8.6				--	>6	--
Acid Neutralisation Capacity (mol / kg)	5.5				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0075			0.0620	0.5	2	25
Barium *	0.0339			0.280	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0011			0.0089	0.5	10	70
Copper *	0.027			0.22	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0079			0.0650	0.5	10	30
Nickel *	0.0064			0.053	0.4	10	40
Lead *	0.0018			0.015	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.014			0.12	4	50	200
Chloride *	5.0			41	800	15000	25000
Fluoride	0.18			1.5	10	150	500
Sulphate *	94			770	1000	20000	50000
TDS*	150			1300	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	16.9			139	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.5						
Dry Matter (%)	87						
Moisture (%)	13						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** = MCFRTS accredited		

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-85093							
					Client: RAMBOLL			
Location	1620005167							
Lab Reference (Sample Number)	1927465 / 1927466				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	09/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	BASEMENT 03							
Depth (m)								
Solid Waste Analysis								
TOC (%)**	0.6				3%	5%	6%	
Loss on Ignition (%) **	2.5				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	43				500	--	--	
Total PAH (WAC-17) (mg/kg)	9.01				100	--	--	
pH (units)**	8.5				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	3.6				--	To be evaluated	To be evaluated	
Eluate Analysis								
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test			
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	0.0052			0.0441	0.5	2	25	
Barium *	0.0351			0.299	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0008			0.0067	0.5	10	70	
Copper *	0.021			0.18	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	0.0078			0.0663	0.5	10	30	
Nickel *	0.0058			0.049	0.4	10	40	
Lead *	0.0026			0.022	0.5	10	50	
Antimony *	< 0.0017			< 0.017	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0060			0.051	4	50	200	
Chloride *	20			170	800	15000	25000	
Fluoride	0.21			1.8	10	150	500	
Sulphate *	84			710	1000	20000	50000	
TDS*	180			1500	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	14.5			123	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.5							
Dry Matter (%)	88							
Moisture (%)	12							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCFRTS accredited			

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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

Analytical Report Number : 21-85093

Project / Site name: 1620005167

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1927461	BASEMENT 01	None Supplied	None Supplied	Brown loam and clay with gravel.
1927463	BASEMENT 02	None Supplied	None Supplied	Brown loam and clay with gravel.
1927465	BASEMENT 03	None Supplied	None Supplied	Brown loam and clay with gravel.

Analytical Report Number : 21-85093

Project / Site name: 1620005167

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 21-85093

Project / Site name: 1620005167

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

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

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

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

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

Sample Deviation Report



Analytical Report Number : 21-85093

Project / Site name: 1620005167

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BASEMENT 01	None Supplied	S	1927461	c	BTEX in soil (Monoaromatics)	L073B-PL	c
BASEMENT 01	None Supplied	S	1927461	c	Mineral Oil (Soil) C10 - C40	L076-PL	c
BASEMENT 01	None Supplied	S	1927461	c	PCB's By GC-MS in soil	L027-PL	c
BASEMENT 01	None Supplied	S	1927461	c	Speciated WAC-17 PAHs in soil	L064-PL	c
BASEMENT 01	None Supplied	S	1927461	c	Total BTEX in soil (Poland)	L073-PL	c
BASEMENT 02	None Supplied	S	1927463	c	BTEX in soil (Monoaromatics)	L073B-PL	c
BASEMENT 02	None Supplied	S	1927463	c	Mineral Oil (Soil) C10 - C40	L076-PL	c
BASEMENT 02	None Supplied	S	1927463	c	PCB's By GC-MS in soil	L027-PL	c
BASEMENT 02	None Supplied	S	1927463	c	Speciated WAC-17 PAHs in soil	L064-PL	c
BASEMENT 02	None Supplied	S	1927463	c	Total BTEX in soil (Poland)	L073-PL	c
BASEMENT 03	None Supplied	S	1927465	c	BTEX in soil (Monoaromatics)	L073B-PL	c
BASEMENT 03	None Supplied	S	1927465	c	Mineral Oil (Soil) C10 - C40	L076-PL	c
BASEMENT 03	None Supplied	S	1927465	c	PCB's By GC-MS in soil	L027-PL	c
BASEMENT 03	None Supplied	S	1927465	c	Speciated WAC-17 PAHs in soil	L064-PL	c
BASEMENT 03	None Supplied	S	1927465	c	Total BTEX in soil (Poland)	L073-PL	c

Chris Dawson
Ramboll UK
1 Broad Gate
The Headrow Leeds
LS1 8EQ

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: chris.dawson@ramboll.co.uk

Analytical Report Number : 21-89671

Project / Site name:	Abraham Moss - Slab Removal	Samples received on:	28/07/2021
Your job number:	1620005164-001	Samples instructed on/ Analysis started on:	28/07/2021
Your order number:	1620041417	Analysis completed by:	04/08/2021
Report Issue Number:	1	Report issued on:	04/08/2021
Samples Analysed:	5 10:1 WAC samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-89671							
					Client: RAMBOLL			
Location	Abraham Moss - Slab Removal							
Lab Reference (Sample Number)	1954374 / 1954375				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	27/07/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	VS01							
Depth (m)	0.20-0.30							
Solid Waste Analysis								
TOC (%)**	0.5				3%	5%	6%	
Loss on Ignition (%) **	1.6				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	18.1				100	--	--	
pH (units)**	7.9				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	9.2				--	To be evaluated	To be evaluated	
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test			
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	0.0022			0.0198	0.5	2	25	
Barium *	0.0553			0.489	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0077			0.068	0.5	10	70	
Copper *	0.011			0.099	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	0.0041			0.0366	0.5	10	30	
Nickel *	0.0014			0.012	0.4	10	40	
Lead *	< 0.0010			< 0.010	0.5	10	50	
Antimony *	< 0.0017			< 0.017	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0044			0.039	4	50	200	
Chloride *	9.4			83	800	15000	25000	
Fluoride	0.45			4.0	10	150	500	
Sulphate *	900			8000	1000	20000	50000	
TDS*	620			5500	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	6.99			61.9	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.2							
Dry Matter (%)	89							
Moisture (%)	11							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					*= UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** = MCERTS accredited			

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-89671							
					Client: RAMBOLL			
Location	Abraham Moss - Slab Removal							
Lab Reference (Sample Number)	1954376 / 1954377				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	27/07/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	VS04							
Depth (m)	0.10-0.40							
Solid Waste Analysis								
TOC (%)**	< 0.1				3%	5%	6%	
Loss on Ignition (%) **	3.3				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--	
pH (units)**	8.0				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	11				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test			
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	< 0.0010			< 0.0100	0.5	2	25	
Barium *	0.0667			0.612	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0012			0.011	0.5	10	70	
Copper *	0.0031			0.028	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30	
Nickel *	0.0023			0.021	0.4	10	40	
Lead *	0.0049			0.045	0.5	10	50	
Antimony *	< 0.0017			< 0.017	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.015			0.14	4	50	200	
Chloride *	8.3			76	800	15000	25000	
Fluoride	0.30			2.7	10	150	500	
Sulphate *	150			1400	1000	20000	50000	
TDS*	210			1900	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	3.42			31.4	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.2							
Dry Matter (%)	92							
Moisture (%)	8.4							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCFRTS accredited			

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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



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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

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

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-89671							
					Client: RAMBOLL			
Location	Abraham Moss - Slab Removal							
Lab Reference (Sample Number)	1954380 / 1954381				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	27/07/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	VS07							
Depth (m)	0.40-0.50							
Solid Waste Analysis								
TOC (%)**	2.4				3%	5%	6%	
Loss on Ignition (%) **	5.5				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--	
pH (units)**	8.2				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	2.2				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test			
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	< 0.0010			< 0.0100	0.5	2	25	
Barium *	0.0142			0.114	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0008			0.0065	0.5	10	70	
Copper *	0.0016			0.013	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30	
Nickel *	0.0025			0.020	0.4	10	40	
Lead *	< 0.0010			< 0.010	0.5	10	50	
Antimony *	< 0.0017			< 0.017	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0044			0.035	4	50	200	
Chloride *	0.40			3.2	800	15000	25000	
Fluoride	0.42			3.4	10	150	500	
Sulphate *	1.8			14	1000	20000	50000	
TDS*	37			290	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	5.38			43.1	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.5							
Dry Matter (%)	80							
Moisture (%)	20							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCFRTS accredited			

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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



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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

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

Analytical Report Number : 21-89671

Project / Site name: Abraham Moss - Slab Removal

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1954374	VS01	None Supplied	0.20-0.30	Brown loam and sand with gravel and brick.
1954376	VS04	None Supplied	0.10-0.40	Brown clay and sand with gravel.
1954378	VS03	None Supplied	0.40-0.50	Brown clay and sand with gravel.
1954380	VS07	None Supplied	0.40-0.50	Brown sand.
1954382	VS06	None Supplied	0.20-0.30	Brown clay.

Analytical Report Number : 21-89671

Project / Site name: Abraham Moss - Slab Removal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 21-89671

Project / Site name: Abraham Moss - Slab Removal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

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

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

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

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

Viktoriya Grygoryshchak

Ramboll UK
1 Broad Gate
The Headrow Leeds
LS1 8EQ

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: viktoriya.grygoryshchak@ramboll.co.uk

Analytical Report Number : 21-91779

Project / Site name:	Abraham Moss	Samples received on:	06/08/2021
Your job number:	1620005164-001	Samples instructed on/ Analysis started on:	06/08/2021
Your order number:	K020041417	Analysis completed by:	13/08/2021
Report Issue Number:	1	Report issued on:	13/08/2021
Samples Analysed:	3 10:1 WAC samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.

This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.

This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

i2 Analytical

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:	21-91779							
					Client: RAMBOLL			
Location	Abraham Moss							
Lab Reference (Sample Number)	1966132 / 1966133				Landfill Waste Acceptance Criteria			
					Limits			
Sampling Date	05/08/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	VS11							
Depth (m)	0.70-0.80							
Solid Waste Analysis								
TOC (%)**	3.6				3%	5%	6%	
Loss on Ignition (%) **	7.7				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg)	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	187				100	--	--	
pH (units)**	7.5				--	>6	--	
Acid Neutralisation Capacity (mol / kg)	0.85				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test			
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	0.0137			0.106	0.5	2	25	
Barium *	0.0508			0.394	20	100	300	
Cadmium *	< 0.0001			< 0.0008	0.04	1	5	
Chromium *	0.0015			0.012	0.5	10	70	
Copper *	0.0090			0.070	2	50	100	
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *	0.0406			0.315	0.5	10	30	
Nickel *	0.0044			0.034	0.4	10	40	
Lead *	0.0080			0.062	0.5	10	50	
Antimony *	0.019			0.15	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0098			0.076	4	50	200	
Chloride *	2.0			16	800	15000	25000	
Fluoride	0.66			5.1	10	150	500	
Sulphate *	41			320	1000	20000	50000	
TDS*	110			880	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	17.2			134	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.3							
Dry Matter (%)	79							
Moisture (%)	21							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCFRTS accredited			

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

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

Analytical Report Number : 21-91779

Project / Site name: Abraham Moss

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1966128	LR01	None Supplied	0.3	Brown clay and loam with gravel.
1966130	VS09	None Supplied	0.40-0.50	Brown clay and loam.
1966132	VS11	None Supplied	0.70-0.80	Brown clay and loam.

Analytical Report Number : 21-91779

Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 21-91779
Project / Site name: Abraham Moss

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

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

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

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

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

APPENDIX D– UK LEGISLATIVE CONTEXT AND METHODOLOGIES

LEGISLATIVE CONTEXT

The regime for contaminated land was set out in Part 2A (ss.78A-78YC) of the Environmental Protection Act 1990 (EPA), as inserted by S.57 of The Environment Act 1995 and came into effect in England on 1st April 2000 as The Contaminated Land (England) Regulations 2000 (SI 2000/227). These regulations were subsequently revoked with the provision of The Contaminated Land (England) Regulations 2006 (SI 2006/1380) (as amended), which came into force in August 2006, and consolidated the previous regulations and amendments. Revised statutory guidance ("the Guidance") for local authorities on how to implement the regime, including the decision-making process on whether land is contaminated land in the legal sense, has been published by Defra and entered into force in April 2012.

Under Part 2A of the EPA Section 78A(2), "contaminated land" is defined as "land which appears... to be in such a condition, by reason of substances in, on or under the land, that:

- a) significant harm is being caused or there is a significant possibility of such harm being caused¹; or
- b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused".

"Significant harm" is defined in the Guidance on risk-based criteria and must be the result of one or more relevant 'contaminant linkages' relating to the land. The presence of a contaminant linkage relies on the Source-Pathway-Receptor concept, where all three factors must be present and potentially or actually linked for a potential risk to exist. Under the Guidance, a 'significant contaminant linkage' is one which gives rise to a level of risk sufficient to justify a piece of land being determined as contaminated land. Should the authority consider that there is an unacceptably high probability, supported by robust science-based evidence that significant harm would occur if no action is taken to stop it, the land should be deemed a Category 1: Human Health. Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm. Both Category 1 and Category 2 cases would be capable of being determined as contaminated land under Part 2A on the grounds of significant possibility of significant harm to human health. If the legal test for significant possibility of significant harm is not met, the authority should place the land into Category 3. If the local authority considers that there is no risk or that the level of risk posed is low, the land should be placed into Category 4.

For six common contaminants (benzo(a)pyrene, cadmium, arsenic, benzene, hexavalent chromium and lead), a set of screening values have been developed and endorsed for use by Defra² (the Category 4 Screening Levels, or C4SLs) that describe a level of risk just below the Category 3/4 boundary set in the Statutory Guidance, i.e. where concentrations are below the C4SL, there is no risk or the level of risk is acceptably low. The Environment

¹ Water Act 2003 (Commencement No. 11) Order 2012

² SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document, Defra, revised December 2014

Agency states under their Land Contamination Risk Management (LCRM)³ approach that they expect C4SL values to be used in risk assessments for land contamination.

The pollution of controlled waters is defined in Section 78A(9) of the Act as “the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter”. The new Guidance stresses that the Part 2A regime is designed to identify and deal with ‘significant pollution’ and not lesser levels of pollution. As with human health risk, Categories 1 and 2 comprise land where the local authority considers that a significant possibility of significant pollution of controlled waters exists and Categories 3 and 4 comprises cases where the authority considers that a significant possibility of such pollution does not exist. The local authority should be satisfied that a substance is continuing to enter controlled waters or is likely to enter controlled waters.

Risk Assessment Framework

“Significant harm” or “significant pollution of controlled waters” is defined in the Guidance on risk-based criteria and must be the result of one or more relevant ‘contaminant linkages’ relating to the land.

The presence of a contaminant linkage relies on the Source-Pathway-Receptor concept, where all three factors must be present and potentially or actually linked for a potential risk to exist. For a risk of pollution or environmental harm to occur as a result of ground contamination, all of the following elements must be present:

- A source - a substance that is capable of causing pollution or harm;
- A receptor - something which could be adversely affected by the contaminant; and
- A pathway - a route by which the contaminant can reach the receptor.

If one of these elements is absent there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

The Land Contamination: Risk Management⁴ (LCRM) provides the technical framework for structured decision making about land contamination. LCRM advocates a phased approach, commencing with Stage 1 Risk Assessment comprising:

- Preliminary Risk Assessment (PRA) – desk study and qualitative assessment to develop of an outline Conceptual Site Model (CSM);
- Generic Quantitative Risk Assessment (GQRA) – an estimation of risk through assessment of contaminant concentrations against generic assessment criteria; and
- Detailed Quantitative Risk Assessment (DQRA) – an estimation of risk through detailed site-specific risk assessment and development of site-specific assessment criteria (SSAC) and site-specific risk assessment.

³ Environment Agency (2020) Land Contamination Risk Management

⁴ Land Contamination: Risk Management (LCRM), published by the Environment Agency on 8 October 2020

Each stage of assessment is focussed upon the development and refinement of a conceptual site model, which identifies Source-Pathway-Receptor linkages. The conceptual site model has been developed with consideration to guidance including BS EN ISO 21365:2020 Soil quality – Conceptual site models for potentially contaminated sites.

RISK ESTIMATION

An assessment of environmental risks is made for each potential pollutant linkage identified.

Risk estimation has been completed in accordance with the guidance provided in:

- NHBC and Environment Agency 2008. Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D Publication 66: 2008.

The following is taken directly from NHBC/EA 2008. The key to the classification is that the designation of risk is based upon the consideration of both:

- the magnitude of the potential consequence (i.e. severity) [takes into account both the potential severity of the hazard and the sensitivity of the receptor]; and
- the magnitude of probability (i.e. likelihood) [takes into account both the presence of the hazard and receptor and the integrity of the pathway].

Table 1: Classification of Consequence (after NHBC/EA 2008)

Category	Definition
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.

Category	Definition
Mild	Exposure to human health unlikely to lead to “significant harm”. Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.

* For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned.

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 2: Classification of Probability (after NHBC/EA 2008)

Category	Definition
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is pollutant linkage and all the 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 pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place and is less likely in the shorter term.
Unlikely	There is pollutant linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 3: The Classification of Risk (after NHBC/EA 2008)

	Consequence
--	-------------

		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high	High	Moderate	Low
	Likely	High	Moderate	Moderate/Low	Low
	Low Likelihood	Moderate	Moderate/ Low	Low	Very low
	Unlikely	Moderate/ Low	Low	Very low	Very low

Very high risk

There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.

High risk

Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.

Moderate risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.

Low risk

It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.

Very low risk

It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.

No potential risk

There is no potential risk if no pollution linkage has been established.

GQRA Methodologies

In order to assess the significance of contaminant concentrations, Ramboll has derived Generic Assessment Criteria (GAC) for screening purposes.

GAC are derived for each critical receptor identified. Receptors are considered in relation to:

- Human health receptors (e.g. site users); and
- The water environment (e.g. groundwater and surface water).

Potential risks to human health are considered primarily using measured concentrations of contaminants in soil. Potential risks to the water environment are considered primarily using groundwater and soil leachate (most commonly in the absence of groundwater) concentrations as indicative of the potentially mobile fraction of any soil impact.

Additional receptors may be relevant, dependent on the site e.g. flora/fauna, water supply pipes, buried concrete.

Soil Assessment

In accordance with current UK guidance on legislation including Part 2A of the Environmental Protection Act 1990 and based on the principles of risk assessment, Ramboll has derived generic criteria for interpretation of soil and groundwater chemical analysis (Ramboll Generic Assessment Criteria – Ramboll GAC). The assessment of chemical data from an intrusive investigation is undertaken in a tiered approach, and the first stage is a Generic Quantitative Risk Assessment (GQRA). The Ramboll GAC are considered to be threshold-based screening concentrations, at which a significant risk is not considered to be present to the relevant receptors.

Waste Classification

Reference Documents

Ramboll's assessment of waste soils was completed in accordance with the following UK guidance documents:

- The Waste Hierarchy as set out in Article 4 of the revised Waste Framework (Directive 2008/98/EC);
- Technical Guidance WM3: Waste classification – Guidance on the classification and assessment of waste (1st Edition v1.1) May 2018;
- The European Waste Catalogue (EWC 2002); and
- The Hazardous Waste (England and Wales) Regulations 2005, or Special Waste Regulations 1996 and its amendments (Scotland).

Methodology

The first step of the assessment confirms whether soil is deemed to be a 'waste'. If there are no legitimate options for reusing, recycling or recovery of the soil, then the soil is a waste requiring onward management.

In terms of the EWC coding system, soil excavated from sites will typically be classified under Section 17 construction and Demolition Wastes (including excavated soil from contaminated sites). If this material is identified for off-site disposal then it may be classed as either:

- 'Soil and Stones containing Dangerous Substances' (EWC Code 170503); or
- 'Soil and Stones other than those mentioned in EWC Code 170503' (EWC Code 170504).

Both 170503 and 170504 are known as a 'Mirror Entry wastes' and they need to be assessed against Threshold Levels for certain dangerous substances in order to confirm whether the soil needs to be classified as hazardous (170503) or non-hazardous (170504).

Soil chemical testing results (total soil analysis – not WAC testing) are used to inform the classification of waste soil to be removed from the site. The results are inputted into HazWasteOnline™ (a web-based tool) which allows the waste to be classified as either hazardous or non-hazardous. The software utilises Environment Agency guidance and European regulations to classify samples in line with current requirements.

Waste Acceptance Criteria (WAC) testing has been undertaken on soils classified as hazardous to ascertain the class of landfill that could be used to accept the waste for off-site disposal. WAC testing may also have been undertaken on soils considered to be inert.

Where wastes have been classified as hazardous, Ramboll has considered options for pre-treatment in the report text. The requirement for pre-treatment is set out in Environment Agency guidance on Dispose of Waste to Landfill⁵.

The presence of asbestos or asbestos containing materials (ACMs) in waste soils requires additional consideration. The Hazardous Waste (England and Wales) Regulations 2005 requires that any waste having an asbestos content greater than 0.1% weight/weight (w/w) be classified as Hazardous Waste. Any waste with an asbestos content of less than 0.1% w/w can be classified as non-hazardous waste, unless there are other contaminants present which would make the waste hazardous.

Where the asbestos is deemed to be of a fibrous nature the Health and Safety Executive (HSE) require that the handling in accordance with The Carriage of Dangerous Goods (etc) Regulations 2009 (CDG2009) and the Control of Asbestos Regulations (2012).

Where friable asbestos is present but at concentrations which are below the hazardous waste threshold, escape of respirable asbestos fibres (i.e. both during packaging and transportation) must be assessed and mitigated where required.

⁵ Environment Agency 2020 Dispose of Waste to Landfill

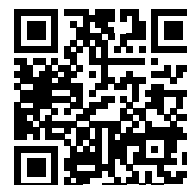
APPENDIX E– SOIL SCREENING SHEETS

APPENDIX F– HAZWASTEONLINE CLASSIFICATION REPORT

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)



3WLWV-GE2VF-DQ36M

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

Job name

Abraham Moss[1]

Description/Comments

Project

Site

Classified by

Name:
Damian Watkins

Company:
Ramboll Environ

Date:
04 Aug 2021 16:32 GMT
Telephone:

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:

Course
Hazardous Waste Classification

Date

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	VS01	0.20-0.30	Non Hazardous		2
2	VS02	1.50-1.80	Non Hazardous		4
3	VS03	0.40-0.50	Non Hazardous		6
4	VS04	0.10-0.40	Non Hazardous		8
5	VS05	0.30-0.35	Non Hazardous		10
6	VS06	0.20-0.30	Non Hazardous		12
7	VS07	0.40-0.50	Non Hazardous		14

Related documents

#	Name	Description
1	Abraham Moss	waste stream template used to create this Job

Report

Created by: Damian Watkins

Created date: 04 Aug 2021 16:32 GMT

Appendices

	Page
Appendix A: Classifier defined and non CLP determinands	16
Appendix B: Rationale for selection of metal species	17
Appendix C: Version	18

Classification of sample: VS01

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

Sample details

Sample name:	LoW Code:
VS01	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)
0.20-0.30 m	
Moisture content:	
11%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **11% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				8.3	pH		8.3	pH	8.3 pH		
2	arsenic { arsenic trioxide }				9.9	mg/kg	1.32	13.071	mg/kg	0.00131 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.53	mg/kg	2.775	1.471	mg/kg	0.000147 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				1.1	mg/kg	3.22	3.542	mg/kg	0.000354 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13	mg/kg	1.462	19	mg/kg	0.0019 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				37	mg/kg	1.126	41.658	mg/kg	0.00417 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	410	mg/kg		410	mg/kg	0.041 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				12	mg/kg	2.637	31.64	mg/kg	0.00316 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				19	mg/kg	1.785	33.919	mg/kg	0.00339 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				170	mg/kg	2.469	419.78	mg/kg	0.042 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.31 mg/kg		0.31 mg/kg	0.000031 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.47 mg/kg		0.47 mg/kg	0.000047 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		1.5 mg/kg		1.5 mg/kg	0.00015 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		1.3 mg/kg		1.3 mg/kg	0.00013 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		1.5 mg/kg		1.5 mg/kg	0.00015 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.79 mg/kg		0.79 mg/kg	0.000079 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.63 mg/kg		0.63 mg/kg	0.000063 %		
24	chrysene	601-048-00-0	205-923-4		1.5 mg/kg		1.5 mg/kg	0.00015 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		3.1 mg/kg		3.1 mg/kg	0.00031 %		
27	fluorene	201-695-5	86-73-7		0.17 mg/kg		0.17 mg/kg	0.000017 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.66 mg/kg		0.66 mg/kg	0.000066 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		2.4 mg/kg		2.4 mg/kg	0.00024 %		
31	pyrene	204-927-3	129-00-0		2.9 mg/kg		2.9 mg/kg	0.00029 %		
32	TPH (C6 to C40) petroleum group		TPH		24 mg/kg		24 mg/kg	0.0024 %		
Total:								0.102 %		

Key

- User supplied data
- 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0024%)

Classification of sample: VS02

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

Sample details

Sample name:	VS02	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	1.50-1.80 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	23%			
	(no correction)			

Hazard properties

None identified

Determinands

Moisture content: 23% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.2	pH		7.2	pH	7.2 pH		
2	arsenic { arsenic trioxide }				35	mg/kg	1.32	46.211	mg/kg	0.00462 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.6	mg/kg	2.775	4.441	mg/kg	0.000444 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				3.8	mg/kg	3.22	12.236	mg/kg	0.00122 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				2.9	mg/kg	1.142	3.313	mg/kg	0.000331 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				28	mg/kg	1.462	40.924	mg/kg	0.00409 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				110	mg/kg	1.126	123.848	mg/kg	0.0124 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	310	mg/kg		310	mg/kg	0.031 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.9	mg/kg	1.353	1.218	mg/kg	0.000122 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				33	mg/kg	2.637	87.011	mg/kg	0.0087 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				45	mg/kg	1.785	80.333	mg/kg	0.00803 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				470	mg/kg	2.469	1160.569	mg/kg	0.116 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		8.8 mg/kg		8.8 mg/kg	0.00088 %		
17	acenaphthylene	205-917-1	208-96-8		0.91 mg/kg		0.91 mg/kg	0.000091 %		
18	anthracene	204-371-1	120-12-7		13 mg/kg		13 mg/kg	0.0013 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		52 mg/kg		52 mg/kg	0.0052 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		49 mg/kg		49 mg/kg	0.0049 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		51 mg/kg		51 mg/kg	0.0051 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		22 mg/kg		22 mg/kg	0.0022 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		30 mg/kg		30 mg/kg	0.003 %		
24	chrysene	601-048-00-0	205-923-4		51 mg/kg		51 mg/kg	0.0051 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		6.1 mg/kg		6.1 mg/kg	0.00061 %		
26	fluoranthene	205-912-4	206-44-0		100 mg/kg		100 mg/kg	0.01 %		
27	fluorene	201-695-5	86-73-7		5.9 mg/kg		5.9 mg/kg	0.00059 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		20 mg/kg		20 mg/kg	0.002 %		
29	naphthalene	601-052-00-2	202-049-5		1.6 mg/kg		1.6 mg/kg	0.00016 %		
30	phenanthrene	201-581-5	85-01-8		58 mg/kg		58 mg/kg	0.0058 %		
31	pyrene	204-927-3	129-00-0		88 mg/kg		88 mg/kg	0.0088 %		
32	TPH (C6 to C40) petroleum group		TPH		660 mg/kg		660 mg/kg	0.066 %		
Total:								0.309 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.066%)

Classification of sample: VS03

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

Sample details

Sample name:	LoW Code:
VS03	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)
0.40-0.50 m	
Moisture content:	
5.8%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.8% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.4	pH		9.4	pH	9.4 pH		
2	arsenic { arsenic trioxide }				7.3	mg/kg	1.32	9.638	mg/kg	0.000964 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.74	mg/kg	2.775	2.054	mg/kg	0.000205 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				2.2	mg/kg	1.142	2.513	mg/kg	0.000251 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	80	mg/kg		80	mg/kg	0.008 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				20	mg/kg	2.637	52.734	mg/kg	0.00527 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				13	mg/kg	1.785	23.207	mg/kg	0.00232 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				140	mg/kg	2.469	345.701	mg/kg	0.0346 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	chrysene	601-048-00-0	205-923-4		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
32	TPH (C6 to C40) petroleum group		TPH		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.0568 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: VS04

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

Sample details

Sample name:	LoW Code:
VS04	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)
0.10-0.40 m	
Moisture content:	
8.4%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.4% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.9	pH		7.9	pH	7.9 pH		
2	arsenic { arsenic trioxide }				16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.6	mg/kg	2.775	4.441	mg/kg	0.000444 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				5.8	mg/kg	1.142	6.626	mg/kg	0.000663 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11	mg/kg	1.462	16.077	mg/kg	0.00161 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				27	mg/kg	1.126	30.399	mg/kg	0.00304 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	680	mg/kg		680	mg/kg	0.068 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				40	mg/kg	2.637	105.467	mg/kg	0.0105 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				17	mg/kg	1.785	30.348	mg/kg	0.00303 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				880	mg/kg	2.469	2172.981	mg/kg	0.217 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	chrysene	601-048-00-0	205-923-4		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
32	TPH (C6 to C40) petroleum group		TPH		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.308 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: VS05

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

Sample details

Sample name:	VS05	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.30-0.35 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	9.4%			
	(no correction)			

Hazard properties

None identified

Determinands

Moisture content: 9.4% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.8	pH		7.8	pH	7.8 pH		
2	arsenic { arsenic trioxide }				3.2	mg/kg	1.32	4.225	mg/kg	0.000423 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.28	mg/kg	2.775	0.777	mg/kg	0.0000777 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.2	mg/kg	3.22	0.644	mg/kg	0.0000644 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.3	mg/kg	1.462	12.131	mg/kg	0.00121 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				9.9	mg/kg	1.126	11.146	mg/kg	0.00111 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	17	mg/kg		17	mg/kg	0.0017 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				8.4	mg/kg	2.637	22.148	mg/kg	0.00221 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				7.4	mg/kg	1.785	13.21	mg/kg	0.00132 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				27	mg/kg	2.469	66.671	mg/kg	0.00667 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	chrysene	601-048-00-0	205-923-4		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
32	TPH (C6 to C40) petroleum group		TPH		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.0164 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: VS06

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

Sample details

Sample name:	LoW Code:
VS06	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)
0.20-0.30 m	
Moisture content:	
20%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				8.1	pH		8.1	pH	8.1 pH		
2	arsenic { arsenic trioxide }				7.5	mg/kg	1.32	9.902	mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.4	mg/kg	2.775	1.11	mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22	mg/kg	1.462	32.154	mg/kg	0.00322 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	17	mg/kg		17	mg/kg	0.0017 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				16	mg/kg	2.637	42.187	mg/kg	0.00422 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				27	mg/kg	1.785	48.2	mg/kg	0.00482 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				42	mg/kg	2.469	103.71	mg/kg	0.0104 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	chrysene	601-048-00-0	205-923-4		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
32	TPH (C6 to C40) petroleum group		TPH		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.0285 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: VS07

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

Sample details

Sample name:	LoW Code:
VS07	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40-0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
20%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				8.7	pH		8.7	pH	8.7 pH		
2	arsenic { arsenic trioxide }				2.4	mg/kg	1.32	3.169	mg/kg	0.000317 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.54	mg/kg	2.775	1.499	mg/kg	0.00015 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.4	mg/kg	1.462	12.277	mg/kg	0.00123 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	7.6	mg/kg		7.6	mg/kg	0.00076 %		
	082-001-00-6											
9	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				9	mg/kg	2.637	23.73	mg/kg	0.00237 %		
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				11	mg/kg	1.785	19.637	mg/kg	0.00196 %		
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				19	mg/kg	2.469	46.917	mg/kg	0.00469 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	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 }				1	mg/kg	1.884	1.884	mg/kg	0.000188 %		
	006-007-00-5											

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	monohydric phenols		P1186		1 mg/kg		1 mg/kg	0.0001 %		
16	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[a]anthracene	601-033-00-9	200-280-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	chrysene	601-048-00-0	205-923-4		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	naphthalene	601-052-00-2	202-049-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
30	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
31	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
32	TPH (C6 to C40) petroleum group		TPH		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.0146 %		

Key

- User supplied data
 - 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
- 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 Soil samples, not considered flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Appendix A: Classifier defined and non CLP determinands

■ pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

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

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

■ lead compounds with the exception of those specified elsewhere in this Annex (worst case)

CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

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

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ monohydric phenols (CAS Number: P1186)

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

■ 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

■ 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

■ 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

■ 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

▪ **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

▪ **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

▪ **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

▪ **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

▪ **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

▪ **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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species

beryllium {beryllium oxide}

boron {diboron trioxide; boric oxide}

cadmium {cadmium oxide}

Potential species in soil

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

Worst case species

copper {dicopper oxide; copper (I) oxide}

Potential species in soil

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

mercury {mercury dichloride}

Worst case species

nickel {nickel sulfate}

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species

vanadium {divanadium pentaoxide; vanadium pentoxide}

zinc {zinc sulphate}

conservative species

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

conservatively assumption

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2021.197.4823.9172 (16 Jul 2021)

HazWasteOnline Database: 2021.197.4823.9172 (16 Jul 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

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 2019 - UK: 2019 No. 720 of 27th March 2019

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

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

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)



XZJ2S-JVT1F-0BLRJ

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

Job name

Abraham Moss Validation

Description/Comments

Project

Site

Classified by

Name: **Hazel Comyn**
 Date: **15 Sep 2021 09:03 GMT**
 Telephone: **0113 204 2880**
 Company: **Ramboll Environ**
3rd Floor Hansbury House,
Chancellor Court
Leeds
LS2 7EH

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:

Course
Hazardous Waste Classification

Date
50% complete

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	LR01	0.30	Non Hazardous		2
2	LR02	0.40	Non Hazardous		5
3	VS09	0.40-0.50	Non Hazardous		8
4	VS11	0.70-0.80	Non Hazardous		11
5	VS12	0.50-0.60	Non Hazardous		14
6	VS13	0.60-0.70	Non Hazardous		16
7	VS08	0.60	Non Hazardous		19
8	BASEMENT 01		Non Hazardous		22
9	BASEMENT 02		Non Hazardous		25
10	BASEMENT 03		Non Hazardous		28
11	VS14	0.4-0.6	Non Hazardous		31
12	VS17	0.4-0.5	Non Hazardous		34

Related documents

#	Name	Description
1	Ramboll typical metals, hydrocarbons and misc	waste stream template used to create this Job

Report

Created by: Hazel Comyn

Created date: 15 Sep 2021 09:03 GMT

Appendices

	Page
Appendix A: Classifier defined and non CLP determinands	37
Appendix B: Rationale for selection of metal species	38
Appendix C: Version	39

Classification of sample: LR01

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

Sample details

Sample name:	LoW Code:
LR01	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)
0.30 m	
Moisture content:	
25%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 25% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.9	pH		9.9	pH	9.9 pH		
2	arsenic { arsenic trioxide }				8.1	mg/kg	1.32	8.556	mg/kg	0.000856 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.55	mg/kg	2.775	1.221	mg/kg	0.000122 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				4.7	mg/kg	13.43	50.497	mg/kg	0.00505 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	0.6	mg/kg	1.285	0.617	mg/kg	0.000048 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				12	mg/kg	1.462	14.031	mg/kg	0.0014 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	15.312	mg/kg	0.00153 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	250	mg/kg		200	mg/kg	0.02 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				15	mg/kg	1.579	18.954	mg/kg	0.0019 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	22.85	mg/kg	0.00229 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				120	mg/kg	2.469	237.052	mg/kg	0.0237 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				0.59 mg/kg		0.472 mg/kg	0.0000472 %	✓	
		204-371-1	120-12-7							
19	benzo[a]anthracene				0.95 mg/kg		0.76 mg/kg	0.000076 %	✓	
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				0.6 mg/kg		0.48 mg/kg	0.000048 %	✓	
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				0.83 mg/kg		0.664 mg/kg	0.0000664 %	✓	
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				0.41 mg/kg		0.328 mg/kg	0.0000328 %	✓	
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				0.33 mg/kg		0.264 mg/kg	0.0000264 %	✓	
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				0.76 mg/kg		0.608 mg/kg	0.0000608 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				2.2 mg/kg		1.76 mg/kg	0.000176 %	✓	
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				0.36 mg/kg		0.288 mg/kg	0.0000288 %	✓	
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				2.8 mg/kg		2.24 mg/kg	0.000224 %	✓	
		201-581-5	85-01-8							
31	pyrene				2 mg/kg		1.6 mg/kg	0.00016 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				730 mg/kg		584 mg/kg	0.0584 %	✓	
			TPH							
Total:								0.117 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0584%)

Classification of sample: LR02

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

Sample details

Sample name:	LoW Code:
LR02	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
22%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		9.9	pH		9.9	pH	9.9 pH		
2	arsenic { arsenic trioxide }				7.3	mg/kg	1.32	7.9	mg/kg	0.00079 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.59	mg/kg	2.775	1.342	mg/kg	0.000134 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.9	mg/kg	13.43	20.916	mg/kg	0.00209 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	0.8	mg/kg	1.285	0.843	mg/kg	0.0000656 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				12	mg/kg	1.462	14.376	mg/kg	0.00144 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				19	mg/kg	1.126	17.534	mg/kg	0.00175 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	200	mg/kg		163.934	mg/kg	0.0164 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				15	mg/kg	1.579	19.42	mg/kg	0.00194 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				18	mg/kg	1.785	26.339	mg/kg	0.00263 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				100	mg/kg	2.469	202.401	mg/kg	0.0202 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				0.55 mg/kg		0.451 mg/kg	0.0000451 %	✓	
		204-371-1	120-12-7							
19	benzo[a]anthracene				1.3 mg/kg		1.066 mg/kg	0.000107 %	✓	
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				0.93 mg/kg		0.762 mg/kg	0.0000762 %	✓	
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				1.1 mg/kg		0.902 mg/kg	0.0000902 %	✓	
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				0.6 mg/kg		0.492 mg/kg	0.0000492 %	✓	
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				0.57 mg/kg		0.467 mg/kg	0.0000467 %	✓	
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				0.76 mg/kg		0.623 mg/kg	0.0000623 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				2.1 mg/kg		1.721 mg/kg	0.000172 %	✓	
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				0.49 mg/kg		0.402 mg/kg	0.0000402 %	✓	
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				2.6 mg/kg		2.131 mg/kg	0.000213 %	✓	
		201-581-5	85-01-8							
31	pyrene				2 mg/kg		1.639 mg/kg	0.000164 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				1090 mg/kg		893.443 mg/kg	0.0893 %	✓	
			TPH							
Total:								0.138 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0893%)

Classification of sample: VS09



Non Hazardous Waste

Classified as 17 05 04
in the List of Waste

Sample details

Sample name:	VS09	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.40-0.50 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	25%			
	(dry weight correction)			

Hazard properties

None identified

Determinands

Moisture content: 25% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.7	pH		9.7	pH	9.7 pH		
2	arsenic { arsenic trioxide }				9.1	mg/kg	1.32	9.612	mg/kg	0.000961 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.63	mg/kg	2.775	1.399	mg/kg	0.00014 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				5.2	mg/kg	13.43	55.869	mg/kg	0.00559 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	0.6	mg/kg	1.285	0.617	mg/kg	0.000048 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				18	mg/kg	1.462	21.046	mg/kg	0.0021 %	✓	
		215-160-9	1308-38-9									
7	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									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	93	mg/kg		74.4	mg/kg	0.00744 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				18	mg/kg	1.579	22.745	mg/kg	0.00227 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	29.991	mg/kg	0.003 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				80	mg/kg	2.469	158.035	mg/kg	0.0158 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				0.21 mg/kg		0.168 mg/kg	0.0000168 %	✓	
		204-371-1	120-12-7							
19	benzo[a]anthracene				0.65 mg/kg		0.52 mg/kg	0.000052 %	✓	
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				0.56 mg/kg		0.448 mg/kg	0.0000448 %	✓	
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				0.65 mg/kg		0.52 mg/kg	0.000052 %	✓	
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				0.29 mg/kg		0.232 mg/kg	0.0000232 %	✓	
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				0.56 mg/kg		0.448 mg/kg	0.0000448 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				1.2 mg/kg		0.96 mg/kg	0.000096 %	✓	
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				0.98 mg/kg		0.784 mg/kg	0.0000784 %	✓	
		201-581-5	85-01-8							
31	pyrene				1.2 mg/kg		0.96 mg/kg	0.000096 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				229 mg/kg		183.2 mg/kg	0.0183 %	✓	
			TPH							
Total:								0.0583 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0183%)

Classification of sample: VS11

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

Sample details

Sample name:	VS11	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.70-0.80 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	21%			
	(dry weight correction)			

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		7.4	pH		7.4	pH	7.4 pH		
2	arsenic { arsenic trioxide }				22	mg/kg	1.32	24.006	mg/kg	0.0024 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.4	mg/kg	2.775	3.211	mg/kg	0.000321 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.2	mg/kg	13.43	13.319	mg/kg	0.00133 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	1.1	mg/kg	1.285	1.168	mg/kg	0.0000909 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				28	mg/kg	1.462	33.821	mg/kg	0.00338 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				65	mg/kg	1.126	60.482	mg/kg	0.00605 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	180	mg/kg		148.76	mg/kg	0.0149 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				1	mg/kg	1.353	1.119	mg/kg	0.000112 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				28	mg/kg	1.579	36.55	mg/kg	0.00366 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				35	mg/kg	1.785	51.638	mg/kg	0.00516 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				160	mg/kg	2.469	326.519	mg/kg	0.0327 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				3.4 mg/kg		2.81 mg/kg	0.000281 %	✓	
		201-469-6	83-32-9							
17	acenaphthylene				0.47 mg/kg		0.388 mg/kg	0.0000388 %	✓	
		205-917-1	208-96-8							
18	anthracene				5.2 mg/kg		4.298 mg/kg	0.00043 %	✓	
		204-371-1	120-12-7							
19	benzo[a]anthracene				13 mg/kg		10.744 mg/kg	0.00107 %	✓	
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				11 mg/kg		9.091 mg/kg	0.000909 %	✓	
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				11 mg/kg		9.091 mg/kg	0.000909 %	✓	
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				6.1 mg/kg		5.041 mg/kg	0.000504 %	✓	
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				6.4 mg/kg		5.289 mg/kg	0.000529 %	✓	
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				10 mg/kg		8.264 mg/kg	0.000826 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				1.7 mg/kg		1.405 mg/kg	0.00014 %	✓	
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				25 mg/kg		20.661 mg/kg	0.00207 %	✓	
		205-912-4	206-44-0							
27	fluorene				3 mg/kg		2.479 mg/kg	0.000248 %	✓	
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				5.2 mg/kg		4.298 mg/kg	0.00043 %	✓	
		205-893-2	193-39-5							
29	naphthalene				0.68 mg/kg		0.562 mg/kg	0.0000562 %	✓	
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				21 mg/kg		17.355 mg/kg	0.00174 %	✓	
		201-581-5	85-01-8							
31	pyrene				24 mg/kg		19.835 mg/kg	0.00198 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				213 mg/kg		176.033 mg/kg	0.0176 %	✓	
			TPH							
Total:								0.1 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0176%)

Classification of sample: VS12

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

Sample details

Sample name:	LoW Code:
VS12	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)
0.50-0.60 m	
Moisture content:	
9.6%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.6% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.8	pH		7.8	pH	7.8 pH		
2	arsenic { arsenic trioxide }				1.9	mg/kg	1.32	2.289	mg/kg	0.000229 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.22	mg/kg	2.775	0.557	mg/kg	0.0000557 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.4	mg/kg	13.43	4.901	mg/kg	0.00049 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				5.7	mg/kg	1.462	7.601	mg/kg	0.00076 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				5.7	mg/kg	1.126	5.855	mg/kg	0.000586 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	5.1	mg/kg		4.653	mg/kg	0.000465 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				4.9	mg/kg	1.579	7.062	mg/kg	0.000706 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				4.5	mg/kg	1.785	7.33	mg/kg	0.000733 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				7	mg/kg	2.469	15.771	mg/kg	0.00158 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
19	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
31	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
			TPH							
Total:								0.00817 %		

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: VS13

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

Sample details

Sample name:	LoW Code:
VS13	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)
0.60-0.70 m	
Moisture content:	
8.5%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.5% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.6	pH		7.6	pH	7.6 pH		
2	arsenic { arsenic trioxide }				13	mg/kg	1.32	15.82	mg/kg	0.00158 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.58	mg/kg	2.775	1.484	mg/kg	0.000148 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.7	mg/kg	13.43	8.665	mg/kg	0.000866 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.474	mg/kg	0.0000369 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				12	mg/kg	1.462	16.165	mg/kg	0.00162 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				32	mg/kg	1.126	33.206	mg/kg	0.00332 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	96	mg/kg		88.479	mg/kg	0.00885 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				12	mg/kg	1.579	17.469	mg/kg	0.00175 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				18	mg/kg	1.785	29.616	mg/kg	0.00296 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				99	mg/kg	2.469	225.309	mg/kg	0.0225 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				0.75 mg/kg		0.691 mg/kg	0.0000691 %	✓	
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				1.1 mg/kg		1.014 mg/kg	0.000101 %	✓	
		204-371-1	120-12-7							
19	benzo[a]anthracene				3.7 mg/kg		3.41 mg/kg	0.000341 %	✓	
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				3.5 mg/kg		3.226 mg/kg	0.000323 %	✓	
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				3.2 mg/kg		2.949 mg/kg	0.000295 %	✓	
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				1.9 mg/kg		1.751 mg/kg	0.000175 %	✓	
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				1.8 mg/kg		1.659 mg/kg	0.000166 %	✓	
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				2.8 mg/kg		2.581 mg/kg	0.000258 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				0.4 mg/kg		0.369 mg/kg	0.0000369 %	✓	
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				7.1 mg/kg		6.544 mg/kg	0.000654 %	✓	
		205-912-4	206-44-0							
27	fluorene				0.58 mg/kg		0.535 mg/kg	0.0000535 %	✓	
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				1.7 mg/kg		1.567 mg/kg	0.000157 %	✓	
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				5.6 mg/kg		5.161 mg/kg	0.000516 %	✓	
		201-581-5	85-01-8							
31	pyrene				7.1 mg/kg		6.544 mg/kg	0.000654 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				60 mg/kg		55.3 mg/kg	0.00553 %	✓	
			TPH							
Total:								0.0535 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00553%)

Classification of sample: VS08

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

Sample details

Sample name:	VS08	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.60 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	73% (dry weight correction)			

Hazard properties

None identified

Determinands

Moisture content: 73% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		8	pH		8	pH	8pH		
2	arsenic { arsenic trioxide }				8.4	mg/kg	1.32	6.411	mg/kg	0.000641 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.89	mg/kg	2.775	1.428	mg/kg	0.000143 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				58	mg/kg	13.43	450.254	mg/kg	0.045 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	1.1	mg/kg	1.285	0.817	mg/kg	0.0000636 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				25	mg/kg	1.462	21.121	mg/kg	0.00211 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				93	mg/kg	1.126	60.525	mg/kg	0.00605 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	41	mg/kg		23.699	mg/kg	0.00237 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				17	mg/kg	1.579	15.521	mg/kg	0.00155 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				31	mg/kg	1.785	31.989	mg/kg	0.0032 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				600	mg/kg	2.469	856.403	mg/kg	0.0856 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
19	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
31	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				184 mg/kg		106.358 mg/kg	0.0106 %	✓	
			TPH							
Total:								0.158 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0106%)

Classification of sample: BASEMENT 01



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

Sample details

Sample name:	LoW Code:
BASEMENT 01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.8	pH		9.8	pH	9.8 pH		
2	arsenic { arsenic trioxide }				4.6	mg/kg	1.32	6.073	mg/kg	0.000607 %	✓	
3	beryllium { beryllium oxide }				0.55	mg/kg	2.775	1.526	mg/kg	0.000153 %	✓	
4	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5	mg/kg	13.43	6.715	mg/kg	0.000672 %	✓	
5	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.257	mg/kg	0.00002 %	✓	
6	chromium { chromium(III) oxide (worst case) }				14	mg/kg	1.462	20.462	mg/kg	0.00205 %	✓	
7	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	20.266	mg/kg	0.00203 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	13	mg/kg		13	mg/kg	0.0013 %	✓	
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
10	nickel { nickel dihydroxide }				20	mg/kg	1.579	31.59	mg/kg	0.00316 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	28.563	mg/kg	0.00286 %	✓	
13	zinc { zinc sulphate }				58	mg/kg	2.469	143.219	mg/kg	0.0143 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
18	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
19	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
20	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
21	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
22	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
23	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
24	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
26	fluoranthene				0.32 mg/kg		0.32 mg/kg	0.000032 %	✓	
		205-912-4	206-44-0							
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
28	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
30	phenanthrene				0.37 mg/kg		0.37 mg/kg	0.000037 %	✓	
		201-581-5	85-01-8							
31	pyrene				0.29 mg/kg		0.29 mg/kg	0.000029 %	✓	
		204-927-3	129-00-0							
32	TPH (C6 to C40) petroleum group				12 mg/kg		12 mg/kg	0.0012 %	✓	
			TPH							
Total:								0.029 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0012%)

Classification of sample: BASEMENT 02

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

Sample details

Sample name: **BASEMENT 02** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.1	pH		9.1	pH	9.1 pH		
2	arsenic { arsenic trioxide }				8.4	mg/kg	1.32	11.091	mg/kg	0.00111 %	✓	
3	beryllium { beryllium oxide }				0.56	mg/kg	2.775	1.554	mg/kg	0.000155 %	✓	
4	boron { boron tribromide/trichloride/trifluoride (combined) }				2.2	mg/kg	13.43	29.546	mg/kg	0.00295 %	✓	
5	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %	✓	
6	chromium { chromium(III) oxide (worst case) }				13	mg/kg	1.462	19	mg/kg	0.0019 %	✓	
7	copper { dicopper oxide; copper (I) oxide }				21	mg/kg	1.126	23.644	mg/kg	0.00236 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	98	mg/kg		98	mg/kg	0.0098 %	✓	
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
10	nickel { nickel dihydroxide }				13	mg/kg	1.579	20.533	mg/kg	0.00205 %	✓	
11	selenium { selenium compounds with the exception of cadmium selenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				17	mg/kg	1.785	30.348	mg/kg	0.00303 %	✓	
13	zinc { zinc sulphate }				70	mg/kg	2.469	172.851	mg/kg	0.0173 %	✓	

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
14	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 }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
15	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
16	acenaphthene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		201-469-6	83-32-9									
17	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
18	anthracene				0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
		204-371-1	120-12-7									
19	benzo[a]anthracene				1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
	601-033-00-9	200-280-6	56-55-3									
20	benzo[a]pyrene; benzo[def]chrysene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
	601-032-00-3	200-028-5	50-32-8									
21	benzo[b]fluoranthene				1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
	601-034-00-4	205-911-9	205-99-2									
22	benzo[ghi]perylene				0.71	mg/kg		0.71	mg/kg	0.000071 %	✓	
		205-883-8	191-24-2									
23	benzo[k]fluoranthene				0.57	mg/kg		0.57	mg/kg	0.000057 %	✓	
	601-036-00-5	205-916-6	207-08-9									
24	chrysene				1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
	601-048-00-0	205-923-4	218-01-9									
25	dibenz[a,h]anthracene				0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
	601-041-00-2	200-181-8	53-70-3									
26	fluoranthene				2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
		205-912-4	206-44-0									
27	fluorene				0.23	mg/kg		0.23	mg/kg	0.000023 %	✓	
		201-695-5	86-73-7									
28	indeno[123-cd]pyrene				0.54	mg/kg		0.54	mg/kg	0.000054 %	✓	
		205-893-2	193-39-5									
29	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
30	phenanthrene				1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
		201-581-5	85-01-8									
31	pyrene				2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
		204-927-3	129-00-0									
32	TPH (C6 to C40) petroleum group				101	mg/kg		101	mg/kg	0.0101 %	✓	
			TPH									
Total:										0.0527 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0101%)

Classification of sample: BASEMENT 03

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

Sample details

Sample name:	LoW Code:
BASEMENT 03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.9	pH		9.9	pH	9.9 pH		
2	arsenic { arsenic trioxide }				7.8	mg/kg	1.32	10.299	mg/kg	0.00103 %	✓	
3	beryllium { beryllium oxide }				0.57	mg/kg	2.775	1.582	mg/kg	0.000158 %	✓	
4	boron { boron tribromide/trichloride/trifluoride (combined) }				2	mg/kg	13.43	26.86	mg/kg	0.00269 %	✓	
5	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %	✓	
6	chromium { chromium(III) oxide (worst case) }				12	mg/kg	1.462	17.539	mg/kg	0.00175 %	✓	
7	copper { dicopper oxide; copper (I) oxide }				23	mg/kg	1.126	25.895	mg/kg	0.00259 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	73	mg/kg		73	mg/kg	0.0073 %	✓	
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
10	nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	28.563	mg/kg	0.00286 %	✓	
13	zinc { zinc sulphate }				64	mg/kg	2.469	158.035	mg/kg	0.0158 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
18	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
19	benzo[a]anthracene				0.58 mg/kg		0.58 mg/kg	0.000058 %	✓		
	601-033-00-9	200-280-6	56-55-3								
20	benzo[a]pyrene; benzo[def]chrysene				0.47 mg/kg		0.47 mg/kg	0.000047 %	✓		
	601-032-00-3	200-028-5	50-32-8								
21	benzo[b]fluoranthene				0.62 mg/kg		0.62 mg/kg	0.000062 %	✓		
	601-034-00-4	205-911-9	205-99-2								
22	benzo[ghi]perylene				0.26 mg/kg		0.26 mg/kg	0.000026 %	✓		
		205-883-8	191-24-2								
23	benzo[k]fluoranthene				0.2 mg/kg		0.2 mg/kg	0.00002 %	✓		
	601-036-00-5	205-916-6	207-08-9								
24	chrysene				0.44 mg/kg		0.44 mg/kg	0.000044 %	✓		
	601-048-00-0	205-923-4	218-01-9								
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
26	fluoranthene				1 mg/kg		1 mg/kg	0.0001 %	✓		
		205-912-4	206-44-0								
27	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
28	indeno[123-cd]pyrene				0.23 mg/kg		0.23 mg/kg	0.000023 %	✓		
		205-893-2	193-39-5								
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
30	phenanthrene				0.83 mg/kg		0.83 mg/kg	0.000083 %	✓		
		201-581-5	85-01-8								
31	pyrene				0.98 mg/kg		0.98 mg/kg	0.000098 %	✓		
		204-927-3	129-00-0								
32	TPH (C6 to C40) petroleum group				65 mg/kg		65 mg/kg	0.0065 %	✓		
			TPH								
Total:									0.0437 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0065%)

Classification of sample: VS14

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

Sample details

Sample name: **VS14** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
Sample Depth: **0.4-0.6 m** Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				9.6	pH		9.6	pH	9.6 pH		
2	arsenic { arsenic trioxide }				8.6	mg/kg	1.32	11.355	mg/kg	0.00114 %	✓	
3	beryllium { beryllium oxide }				0.48	mg/kg	2.775	1.332	mg/kg	0.000133 %	✓	
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.8	mg/kg	13.43	24.174	mg/kg	0.00242 %	✓	
5	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %	✓	
6	chromium { chromium(III) oxide (worst case) }				15	mg/kg	1.462	21.923	mg/kg	0.00219 %	✓	
7	copper { dicopper oxide; copper (I) oxide }				19	mg/kg	1.126	21.392	mg/kg	0.00214 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	200	mg/kg		200	mg/kg	0.02 %	✓	
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
10	nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %	✓	
11	selenium { selenium compounds with the exception of cadmium selenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				15	mg/kg	1.785	26.778	mg/kg	0.00268 %	✓	
13	zinc { zinc sulphate }				150	mg/kg	2.469	370.394	mg/kg	0.037 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
16	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
18	anthracene				0.3 mg/kg		0.3 mg/kg	0.00003 %		✓	
		204-371-1	120-12-7								
19	benzo[a]anthracene				0.91 mg/kg		0.91 mg/kg	0.000091 %		✓	
	601-033-00-9	200-280-6	56-55-3								
20	benzo[a]pyrene; benzo[def]chrysene				0.65 mg/kg		0.65 mg/kg	0.000065 %		✓	
	601-032-00-3	200-028-5	50-32-8								
21	benzo[b]fluoranthene				0.71 mg/kg		0.71 mg/kg	0.000071 %		✓	
	601-034-00-4	205-911-9	205-99-2								
22	benzo[ghi]perylene				0.41 mg/kg		0.41 mg/kg	0.000041 %		✓	
		205-883-8	191-24-2								
23	benzo[k]fluoranthene				0.45 mg/kg		0.45 mg/kg	0.000045 %		✓	
	601-036-00-5	205-916-6	207-08-9								
24	chrysene				0.76 mg/kg		0.76 mg/kg	0.000076 %		✓	
	601-048-00-0	205-923-4	218-01-9								
25	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
26	fluoranthene				1.8 mg/kg		1.8 mg/kg	0.00018 %		✓	
		205-912-4	206-44-0								
27	fluorene				0.32 mg/kg		0.32 mg/kg	0.000032 %		✓	
		201-695-5	86-73-7								
28	indeno[123-cd]pyrene				0.33 mg/kg		0.33 mg/kg	0.000033 %		✓	
		205-893-2	193-39-5								
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
30	phenanthrene				1.4 mg/kg		1.4 mg/kg	0.00014 %		✓	
		201-581-5	85-01-8								
31	pyrene				1.5 mg/kg		1.5 mg/kg	0.00015 %		✓	
		204-927-3	129-00-0								
32	TPH (C6 to C40) petroleum group				191 mg/kg		191 mg/kg	0.0191 %		✓	
			TPH								
Total:									0.0902 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0191%)

Classification of sample: VS17



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

Sample details

Sample name:	LoW Code:
VS17	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)
0.4-0.5 m	

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				10.4	pH		10.4	pH	10.4 pH		
2	arsenic { arsenic trioxide }				7	mg/kg	1.32	9.242	mg/kg	0.000924 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.55	mg/kg	2.775	1.526	mg/kg	0.000153 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
4	boron { boron tribromide/trichloride/trifluoride (combined) }				1.7	mg/kg	13.43	22.831	mg/kg	0.00228 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
5	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium { chromium(III) oxide (worst case) }				18	mg/kg	1.462	26.308	mg/kg	0.00263 %	✓	
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	20.266	mg/kg	0.00203 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	37	mg/kg		37	mg/kg	0.0037 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel dihydroxide }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				20	mg/kg	1.785	35.704	mg/kg	0.00357 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				66	mg/kg	2.469	162.974	mg/kg	0.0163 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
16	acenaphthene				0.38 mg/kg		0.38 mg/kg	0.000038 %	✓		
		201-469-6	83-32-9								
17	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
18	anthracene				0.65 mg/kg		0.65 mg/kg	0.000065 %	✓		
		204-371-1	120-12-7								
19	benzo[a]anthracene				1.8 mg/kg		1.8 mg/kg	0.00018 %	✓		
	601-033-00-9	200-280-6	56-55-3								
20	benzo[a]pyrene; benzo[def]chrysene				1.4 mg/kg		1.4 mg/kg	0.00014 %	✓		
	601-032-00-3	200-028-5	50-32-8								
21	benzo[b]fluoranthene				1.4 mg/kg		1.4 mg/kg	0.00014 %	✓		
	601-034-00-4	205-911-9	205-99-2								
22	benzo[ghi]perylene				0.72 mg/kg		0.72 mg/kg	0.000072 %	✓		
		205-883-8	191-24-2								
23	benzo[k]fluoranthene				0.76 mg/kg		0.76 mg/kg	0.000076 %	✓		
	601-036-00-5	205-916-6	207-08-9								
24	chrysene				1.6 mg/kg		1.6 mg/kg	0.00016 %	✓		
	601-048-00-0	205-923-4	218-01-9								
25	dibenz[a,h]anthracene				0.2 mg/kg		0.2 mg/kg	0.00002 %	✓		
	601-041-00-2	200-181-8	53-70-3								
26	fluoranthene				3.2 mg/kg		3.2 mg/kg	0.00032 %	✓		
		205-912-4	206-44-0								
27	fluorene				0.38 mg/kg		0.38 mg/kg	0.000038 %	✓		
		201-695-5	86-73-7								
28	indeno[123-cd]pyrene				0.59 mg/kg		0.59 mg/kg	0.000059 %	✓		
		205-893-2	193-39-5								
29	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
30	phenanthrene				2.2 mg/kg		2.2 mg/kg	0.00022 %	✓		
		201-581-5	85-01-8								
31	pyrene				2.6 mg/kg		2.6 mg/kg	0.00026 %	✓		
		204-927-3	129-00-0								
32	TPH (C6 to C40) petroleum group				270 mg/kg		270 mg/kg	0.027 %	✓		
			TPH								
Total:									0.0631 %		

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 Hazard unlikely given setting and composition

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.027%)

Appendix A: Classifier defined and non CLP determinands

• pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

• boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06 Aug 2015
Hazard Statements: EUH014 , Acute Tox. 2 H330 , Acute Tox. 2 H300 , Skin Corr. 1A H314 , Skin Corr. 1B H314

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

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

• lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers many simple lead compounds to be Carcinogenic category 2
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium
www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

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

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

• 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

• 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

• 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

• 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

■ **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

■ **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

■ **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

■ **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

■ **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

■ **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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

beryllium {beryllium oxide}

Worst case species based on risk phrases

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

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

Worst case species based on risk phrases

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Worst case species based on risk phrases

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on risk phrases

vanadium {divanadium pentaoxide; vanadium pentoxide}

worst case

zinc {zinc sulphate}

Worst case species based on risk phrases

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}

Worst case species

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2021.246.4869.9247 (05 Sep 2021)

HazWasteOnline Database: 2021.246.4869.9247 (05 Sep 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

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 2019 - UK: 2019 No. 720 of 27th March 2019

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

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

APPENDIX C

V2: LAING O'ROURKE CONSTRUCTION MANAGEMENT ENVIRONMENTAL PLAN

The logo consists of a dark grey rectangle. Inside, there is a yellow horizontal line above the text "LAING O'ROURKE" in white, uppercase letters, which is then followed by a red horizontal line.

LAING O'ROURKE

ENVIRONMENTAL and ENERGY MANAGEMENT PLAN

Abraham Moss

January 2023

Revision History

	Summary of Amendments	Completed By	Date
1.0	First draft – phase 1 (temporary facilities)	T Meakin	31.01.20
2.0	Second draft – pre-start of main works	T Meakin	05.02.21
3.0	Quarterly update	E Galbraith	01.06.21
4.0	Updated with EnPIs section – remains tbc	E Galbraith	03.08.21
5.0	Update to EnPI section	T Meakin	15.12.21
6.0	Further update to EnPI section	T Meakin	12.08.22
7.0	Quarterly Update	T Meakin	22.11.22
8.0	Quarterly update	T Meakin	30.01.23
9.0			
10.0			
11.0			

The Laing O'Rourke Group Environmental and Energy Management Systems define in detail how environmental and energy management is applied throughout the group. The key requirements and actions within the environmental and energy management systems, at an operational level, are defined within this document, the Environmental & Energy Management Plan. The purpose of this plan is to ensure that this location is enabled to comply with all relevant environmental and energy legislation and other requirements and to continually improve environmental and energy performance and processes. These processes are based upon requirements of BS EN ISO 14001:2015 Environmental Management Systems - Specification and ISO 50001:2018 Energy Management Systems – Specification with guidance for use.

Please note: all official guidance, EMS and EnMS proformas and links to legislation and other useful websites can be accessed via iGMS through the Laing O'Rourke Environmental and Energy Planning tiles.

Table of Contents

1		
1.0	SCOPE OF PLAN	4
1.1	SCOPE OF WORKS	4
1.2	DEVIATIONS FROM MINIMUM EMP TEMPLATES/PROCESS	5
2.0	ENVIRONMENTAL & ENERGY POLICY (ISO 14001 CLAUSE 5.2)	5
3.0	PLANNING (ISO 14001 CLAUSE 6)	5
3.1	ENVIRONMENTAL ASPECTS (ISO14001 CLAUSE 6.1.2)	5
3.2	LEGAL AND OTHER COMPLIANCE OBLIGATIONS (ISO14001 CLAUSE 6.1.3, 6.1.4)	6
3.3	CLIENT /PLANNING SPECIFIC REQUIREMENTS	6
3.4	STAKEHOLDERS AND INTERESTED PARTIES (ISO14001 CLAUSE 4.2)	7
3.5	OBJECTIVES AND TARGETS (ISO14001 CLAUSE 6.2)	7
3.6	ENERGY REDUCTION – ENPI'S, TARGET AND APPROACH	9
	<i>3.6.1 EnPI and Reduction Target</i>	<i>9</i>
	<i>3.6.2 Methodology</i>	<i>10</i>
	<i>3.6.3 Energy Review Outputs</i>	<i>10</i>
	<i>3.6.4 Energy Action Plans</i>	<i>11</i>
4.1	ROLES AND RESPONSIBILITIES (ISO14011 CLAUSE 5, 7.1)	11
4.2	COMPETENCY (ISO14001 CLAUSE 7.2, 7.3)	12
5.0	COMMUNICATION (ISO14001 CLAUSE 7.4)	13
6.0	DOCUMENTATION (ISO14001 CLAUSE 7.5)	14
6.1	CONTROL OF DOCUMENTS (ISO14001 CLAUSE 7.5.2 AND 7.5.3)	14
6.2	CONTROL OF RECORDS (ISO14001 CLAUSE 7.5.2, 7.5.3)	14
7.0	OPERATIONAL CONTROL (ISO14001 CLAUSE 8.1)	15
7.1	CONTAMINATED LAND	15
7.2	DOCUMENTED PROCEDURES	15
8.0	EMERGENCY PREPAREDNESS AND RESPONSE (ISO14001 CLAUSE 8.2)	17
9.0	CHECKING (ISO14001 CLAUSE 9)	17
9.1	MONITORING & MEASUREMENT (ISO 14001 CLAUSE 9.1)	17
9.2	VISIT BY STATUTORY BODIES / INTERESTED PARTIES	18
9.3	EVALUATION OF LEGAL COMPLIANCE (ISO14001 CLAUSE 9.1.2)	18
9.4	NON-CONFORMANCE, CORRECTIVE & PREVENTATIVE ACTION (ISO14001 CLAUSE 9.1.2)	19
10.0	INTERNAL AUDIT (ISO14001 CLAUSE 9.2)	19
11.0	MANAGEMENT REVIEW (ISO14001 CLAUSE 9.3)	20

Introduction

This Environmental & Energy Management Plan (EMP) describes the high-level processes followed to fulfil the requirements of the Laing O'Rourke Environmental and Energy Management Systems / ISO 14001 and 50001 standards.

The context of the organisation and the scope of both Management Systems are addressed online within the iGMS.

Both Environmental and Energy Management within Laing O'Rourke is a Business wide issue and is part of the Group's Sustainability strategy - it does not start and stop at the gates of a construction site or office. It affects all our employees and crosses all departmental boundaries at all locations.

The sustainability philosophy adopted by Laing O'Rourke is to ensure that the environmental and energy impacts resulting from its operations are effectively controlled and minimised, to ensure compliance with all relevant legislation and other requirements and to continually improve its environmental and energy performance and processes.

1.0 Scope of Plan

This document is a summary of the main requirements of the ISO14001 and 50001 standards, Client and stakeholder obligation and location specific goals. The main operational controls sit as appendices to it, but these are the critical and live aspects of the EMP.

This Environmental & Energy Management Plan (EMP) is prepared for Abraham Moss and covers the environmental and energy impacts relating directly to the construction activity within the site boundary, but also within the local area that may be affected by the development/activity. The Environmental Risk Assessment, Resource Management Plan and Environmental Emergency Plan are the three key planning procedures that constitute the EMP and these are discussed in later sections.

Review of this EMP and supporting procedures/documents must be completed quarterly. The summary EMP document (this one) will typically only have small changes made (appointments, objectives added/closed).

1.1 Scope of works

Abraham Moss Leisure Centre is a new development that will form part of the wider site, including a primary school, secondary school and adult learning centre.

Construction of the temporary facilities was completed in May 2020 at which point the project was put on pause due to COVID-19.

The new construction aspects will include building a new sports hall, swimming pool, gym and changing facilities, as well as a library and reception area. The build is predominantly in-situ.

It is a tight site, with the schools remaining operational throughout. In addition, there is also a Manchester Metro line stop adjacent to the site.

There will be embargo hours for deliveries in order to reduce congestion around school drop off and pick up times:

08:00 – 09:00

15:00 – 16:00

The demolition works commenced on 1st March 2021 and the main works began in August 2021.

1.2 Deviations from minimum EMP templates/process

There are minimum requirements for several templates/procedures and activities in accordance with the Laing O'Rourke Environmental and Energy Management Systems (see Guidance – EMS Document Revision Tracking). However, with the agreement of the visiting advisor, adjustments can be made in line with the levels or risk or activity occurring. Deviations at this location include:

Document/Procedure	Deviation	Reason	Agreed (Date/Name)

*Deviations are agreed with the Environment Leader and a record is kept of the emailed authorisation.

There are currently no deviations in place on the Abraham Moss project.

2.0 Environmental & Energy Policy (ISO 14001 Clause 5.2)

The Environmental and Energy Policy relevant to the Laing O'Rourke European Business are signed by the Chairman. Policies are held on the policy section of the Laing O'Rourke iGMS.

The policies which currently include: the Environmental & Energy Policy and Sustainability Policy. They are available on iGMS. The Environmental & Energy Policy is displayed on noticeboards and communicated to staff and to those organisations working for or on behalf of Laing O'Rourke as appropriate. Any of the policies are available to external parties including the general public, on request.

3.0 Planning (ISO 14001 Clause 6)

This Environmental & Energy Management Plan has been developed and will be implemented and maintained during all phases of demolition and construction including pre-construction phase (including design stage, demolition); construction stage and post construction as appropriate.

Post-construction EMP activity will include: closing out actions related to the Resource Management Plan, recording and archiving any relevant documentation/calibration records; closing down of any permits acquired for the project; and ensuring lessons learned are captured centrally for discussion in the annual management review.

3.1 Environmental Aspects (ISO14001 Clause 6.1.2)

The environmental aspects of our activities have initially been identified during design and bid stages and then are assessed with a 3-6 month look ahead against our activity/programme of works. To align with the rest of the business and to simplify, we do not refer to "aspects and impacts" in the traditional sense. Instead we use language our people understand i.e. "risk". These are recorded in the Environmental Risk Assessment (ERA) which considers the location and activity specific risks and impacts. The ERA is an integral part of this EMP although held as an appendix due to complexity.

The **main** environmental risks and energy issues (not all) associated with our activity at this location are in the table below. The detailed review of our aspects is held and managed through the ERA.

Risk issue (Aspect/Impact)	Activities
Noise	Various activities will generate noise which could impact the wider site, in particular the schools. The team will adopt best practicable means to limit the noise generated and will be in regular contact with the schools to communicate any specific activities that may have an affect.
Contaminated Land	The land adjacent to the site (to the east of the school is known to be contaminated. Initial ground investigation has not shown any contamination within the actual site boundary, however this has not flagged up any contamination. Whilst this is the case, it remains a risk. The workforce will be briefed on contaminated land, in the event that any contamination or hotspots are uncovered during the groundworks.
Community	With the site situated amongst a live school development, communication with the community and schools will be imperative to mitigate any risks.
Energy Management and performance	The site will be working to ISO50001 and will develop plans and targets in line with this.
Dust	Damping down as required, extraction at source for cutting tools

3.2 Legal and Other compliance obligations (ISO14001 Clause 6.1.3, 6.1.4)

All legal and contractual (client/planning) requirements are incorporated as appropriate into the **Environmental Risk Assessment (ERA)** with appropriate controls and mitigation measures detailed. All permits, licences and consents that may be required during construction have been, and will continue to be, identified and applied for accordingly, ensuring that sufficient time is allowed.

A Group Environmental Legal Register is maintained and held on iGMS. The Legal Register includes legislation that directly impacts our business, but also that that may be indirectly related (items we have no control over but may impact on the developments we work on) and legislation that may be of interest/provides context. Any significant changes to the Group register that may impact on the organisations operations will be communicated internally, through the HS&E Bulletin, Environmental Information Notes and leadership meetings where appropriate.

At this location, the key environmental legislation that has been considered and addressed is predominantly around:

- Water quality
- Air Quality
- Waste
- Noise
- Energy Consumption
- Vibration (nuisance perspective)
- Contaminated Land
- CO₂ Emissions
- Processes that could contaminate land, water or air
- Local Authority planning permissions and requirements

3.3 Client /Planning Specific Requirements

At this location we have also a number of client / planning specific requirements. These are:

Client /Planning Requirement	How they are addressed
Remediation Strategy & Verification Report	Ramboll appointed to carry out additional testing, write the remediation strategy and also the verification report once groundworks are complete. Visits are planned to coincide with the appropriate time in works, with the next visit to occur when top soil delivery commences

3.4 Stakeholders and Interested Parties (ISO14001 Clause 4.2)

At this location we have a number of local stakeholders and community groups that have an acute interest in the development and our business.

Local Stakeholder	Issues/Concerns/Goals	How they are addressed
Abraham Moss Community School	Safety risks around operating near a live construction site. Additionally issues potential issues around construction traffic and congestion, as well as noise.	Regular meetings with the school to provide updates, particularly on exceptional activities that may have more impact on the school. Just in time deliveries.
Manchester City Council (Client)	Reputational damage of the build does not go to plan (over-run, over-budget, poor quality)	Robust processes in place, regular meetings and engagement with the client.
Metroline Users	Construction traffic, difficulty of access	Good traffic management, clear signage
Local residents	Noise, dust, congestion	Regular newsletters
Abraham Moss Leisure Centre	Change in services, quality of facilities, noise, dust, congestion	Regular updates, Just in time deliveries.

3.5 Objectives and Targets (ISO14001 Clause 6.2)

A number of key environmental and energy objectives and targets are defined and communicated on an annual basis, through the company annual report. These objectives and targets align with longer term corporate goals and strive for continuous improvement.

This location has developed specific environmental and energy objectives which align as appropriate with our environmental risk profile and any particular client/planning requirements. These are recorded in the Objectives and Targets table below which lists the corporate, Business Unit and location specific environmental and energy objectives and targets.

Objective - What is it you are targeting (water/waste/energy minimisation/timber cert./ BREEAM etc.)

Actions – what is required (detail may be embedded within e.g. Environmental Risk Assessment)

Responsibility - who is the lead that is going to make this happen?

Evidence / Progress - how is progress going to be monitored?

Target/Time Constraint – realistic timescales – some may be project duration; short term / one off?

Examples below in red – alter/replace as required

Objective	Actions	Responsibility	Evidence / Progress	Target/Time Constraint
Location Specific Objectives/Targets (Mandatory to set)				

Achieve water consumption 10m3/£100k	Collect waste data from all relevant contractors	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Track monthly, achieve by the end of the job.
Achieve waste of 6.5t/100m2	Collect waste data from all relevant contractors	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Track monthly, achieve by the end of the job.
Achieve 1500kgCO2/£100k	Collect electricity and fuel data from all relevant contractors	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Track monthly, achieve by the end of the job.
Achieve 5% reduction in energy use	Collect data for a 6 month period. After this period review with the project team and set target.	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Timescales to be agreed at the 6 month review. Likely to be requirement to achieve by the end of the job or after a year.
Achieve waste transportation emissions of 400kgCO2/100k	Collect km travelled, fuel consumption and total CO2 emissions	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Track monthly, achieve by the end of the job.
Achieve material transportation emissions of 800kgCO2/100k	Collect km travelled, fuel consumption and total CO2 emissions	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Track monthly, achieve by the end of the job.
Client Objectives				
BREEAM Very Good	Review pre-assessment. Complete regular reviews.	Tatiana Meakin	Tracker + reviewed monthly, unless otherwise required.	Achieve Very Good at Design Stage by end April 2020 (as a minimum have all evidence submitted, awaiting review by SRL or decision by BRE).
NWCH waste target (Xt/£m)	Awaiting further details on revised targets.	Tatiana Meakin	IMPACT and environmental KPI spreadsheet	Achieve at the end of the job. Review monthly to track progress

3.5.1 Energy Action Plans

Our corporate energy management system requirements need to be considered when reviewing energy performance related risk and opportunity and may result in improvement plans in the form of the EAP – Energy Action Plan as appropriate. Energy management and performance should be a consideration in ERA, but could also form one or more of the location specific objectives. Implementation of an EAP may be triggered by a corporate initiative; client initiative or most likely as a result of the quarterly review and update of the Ste Energy Review or performance review in meetings such as HS&E or progress meetings.

Corporate	Issues/Concerns/Goals	How they are addressed
Clients	Energy efficiency considered element of quality control for construction projects Positive PR from energy-reduction innovations applied to construction processes on projects	Ensure efficient delivery Capture and communicate good news stories
All Employees	Job satisfaction & fulfilment associated with progress in saving energy/reducing carbon	Capture and communicate success
Select Plant Hire	Ensuring Select offer the most cost-effective vehicles, plant, site accommodation, equipment to staff and projects, from a whole-life perspective	Track opportunities to update our offer to projects/sites, and ensure presentation of opportunities which encourage uptake of most efficient options
Facilities Management	Improving data management with respect to energy consumption Tracking technology progress relating to energy consumption Investment in the optimal energy solutions in our permanent premises, informed by data	Support development of data systems and maximise value of data collected for driving improvement Support investment in optimal solutions Communicate successes in improving energy management that results
Finance/ Commercial	Track and minimise costs relating to energy bills and related investment	Ensure financial guidance and impetus for improved energy management

3.6 Energy Reduction – EnPi's, Target and Approach

3.6.1 EnPI and Reduction Target: TBC

NB: The energy reduction target setting is 5% reduction by the end of the project

The project has opted for an Energy Performance Indicator (EnPI) of kWh per man hour.

Advice from the Carbon Trust suggests that a saving of 5-10% can be achieved through the implementation of an awareness campaign but this was not particular to a construction project that changes on a daily basis. After a review of the SEUs, 2.5 has been assessed as appropriately stretching reduction target range, to be realised by the end of the project. The baseline period against which this reduction target will be measured covers the first 3 months following the site's connection to the electricity grid.

The 5% energy reduction target is based on total estimated savings from the following specific planned action(s) for this project. Performance will be monitored and measured based on the metric above. The target reduction therefore anticipates performance of 3.84 kwh/man hour to meet a 5% reduction.

<u>Specific Target</u>	<u>How it will be Monitored/Measured</u>	<u>How will it be Achieved</u>	<u>Time-frame</u>
Reduce energy consumption by 5% (normalised against kWh/man hour) compared to the baseline period Aug-21 to end Jul-22	Include energy performance in monthly KPI monitoring and reports and discuss progress in monthly environmental	An awareness campaign and training	By the end of the project in May-23.

	meetings with project managers.		
--	---------------------------------	--	--

3.6.2 Methodology

A review of all current energy-using equipment on site and the planned large consumers (SEUs) was undertaken at the point of completion of the EnMS Site Energy Review Checklist. As the project was well underway when this exercise was completed, the project team used the Energy Review Checklist and discussed the SEUs (Significant Energy Uses) which were identified as:

- Temporary Electrics
- Site Power
- Site Lighting
- Temporary heating (required for screeding/vinyl) over winter
- Commissioning of the pool (to come at later date)

The following people/roles were involved in the review:

Name	Role
George Holgate	Project Leader
Tatiana Meakin	Senior Environmental Adviser

To determine the EnPI, it was determined that an awareness campaign would be carried out on the project, giving a 5% improvement in line with expectations set-out by The Carbon Trust.

Excluding the demolition phase (as it was a distinctly separate period to main works), the project had 12 months data to use as a baseline. The EnPI was calculated for this period (4.85 kwh/man hour) and so a KPI of 4.6 kwh/man hour was set (a 5% reduction), all working is shown in document '12. Abraham Moss KPI Monitoring Sheet July 2022' in tab 'Energy Efficiency Working'.

The data and monthly monitoring is detailed in tab 'Energy Efficiency' and shows the raw data and calculations of both monthly and cumulative performance. This allows us to track the overall performance, while still identifying monthly anomalies and therefore allowing us to intervene.

Using the forecasted man hours, we are able to understand the kwh permissible each month to stay within the KPI so we can clearly see whether we are on track. This system builds some flex in, to account for the fact that activities change over time even when man hours remain consistent (ie. some months we may 'overspend' and others significantly 'underspend'. This also means another hold point is built-in to the calculations, for example, if there was a run of months where we were 'overspending', we can interrogate site operations in more detail.

3.6.3 Energy Review Outputs

The Energy review included the following:

- Energy Action Plan for an awareness campaign

3.6.4 Energy Action Plans

Energy management and performance are already a consideration in ERA, but can also form one or more of the location specific objectives. Implementation of an EAP can be triggered by a corporate initiative; client initiative or most likely as a result of the mandated **six monthly Energy Review** including update of the Site Energy Review Checklist where appropriate or performance review in meetings such as HS&E or progress meetings. EAP's are designed to target specific areas of focus e.g. behavioural programme; fuel trial; LED replacement programme; hybrid plant trial and can be long or short term. The EAP template is held within the Environmental Risk Assessment document.

On this project we have the following EAP:

Date	EAP Number	Brief Description	Lead (name)
21/09/22	EAP/001	Awareness Campaign	Tatiana Meakin

Effectiveness of this EAP and how performance is developing (positively or negatively) is evaluated during the six monthly review of energy performance and the Energy Review Checklist. Progress will be monitored along with the typical KPI monitoring sheets.

4.0 Implementation and Operation (ISO14001 Clause 5, 7, 8)

4.1 Roles and Responsibilities (ISO14011 Clause 5, 7.1)

The European Hub Director has overall accountability for the effectiveness of the Environmental and Energy Management Systems. Day to day responsibility has been delegated to the Heads of HS&E and Sustainability & Carbon. Maintenance and development of the EMS & EnMS to meet stakeholder pressures, regulatory changes, ISO 14001 & 50001 certification and industry best practice requirements is the responsibility of the Environmental Leader and Energy Management Team.

The Head of HS&E will ensure an effective HS&E service is provided, staffed by competent personnel and ensure that each Business operates within the Group Policies. The Head of HS&E will report to the executive board.

The Head of Sustainability and Carbon Management is responsible for the development of strategic Sustainability and Energy Management programmes for business reporting into the Head of HS&E.

The Project Manager is accountable for the Environmental and Energy Management Plan and its implementation, but day to day maintenance of the EMP documentation and any reports will be carried out by the appointed Project Environmental Co-ordinator. An environmental co-ordinator will be appointed in due course, but for the time being, these responsibilities will be picked up by Tatiana Meakin.

The environmental and energy management structure and main personnel with key EMP responsibilities are listed in the table below. The appointment letter describing the full responsibilities of the Project Environmental Co-ordinator can be found on the server (folder 8.14.1).

Role	Name	Contact details
Environmental Advisor (visiting)	Tatiana Meakin	07385 421 544

Project Leader	George Holgate	07887 056 930
Construction Manager	Tom Ogden	07818 528 844
Construction Manager	Brian Varey	
Design Manager	Andy Bowyer	07850 115 471

4.2 Competency (ISO14001 Clause 7.2, 7.3)

Staff will be appointed to roles with responsibilities for managing environmental and energy issues based on their knowledge, training and experience of the relevant topic area.

Environmental and energy management training courses will be offered to the staff as required to complete their roles. The primary objectives of training are to ensure that:

- i. personnel are fully aware of the Environmental & Energy Policy and their respective roles and responsibilities;
- ii. personnel are fully aware of the potential environmental and energy impact of their work and associated environmental and energy issues;
- iii. individually and collectively, personnel are committed to the provision of a sound environmental and energy performance;
- iv. activities of personnel do not expose and Laing O'Rourke company to criticism or legal/financial liability;
- v. effective communication in respect of environmental and energy issues exists within the corporate body;
- vi. the potential consequences of not complying with the EMS, EnMS and legal requirements.

Whilst the training pattern adopted is holistic in application, i.e. from managers to operatives, to be effective in ensuring environmental and energy performance improvements it must be targeted, i.e. relevant and appropriate to the receiving individual/group, in form, depth and content. Each location will determine the environmental and energy training requirements of all personnel working for or on behalf of Laing O'Rourke and ensure that those needs are met.

Where the environmental and/or energy risks are significant, it is essential that this information received during induction is subsequently reinforced and expanded and that this continual training is targeted appropriately.

Site operatives and staff will attend additional specific environmental and/or energy presentations/ training if, and when, identified.

Where appropriate, Environmental and Energy Efficiency Toolbox Talks (TBTs) will be given to site operatives (including subcontractors). Toolbox talks must be relevant to the current activity or environmental and/or energy risks present. A register of all attendees will be maintained in the Training Records folder on the server (8.14.16).

The Environmental Co-ordinator must have attended the one-day workshop or one-to-one competency session around their responsibilities which includes instruction on how to use the Laing O'Rourke IMPACT monitoring system. The Coordinator receives additional support from a regional or BU Environmental Adviser.

At this location records of all environmental and energy-related training including Spill Drill/Emergency condition drills will be maintained in the Training Records folder on the server (8.14.16).

5.0 Communication (ISO14001 Clause 7.4)

Internal Communication:

The Environmental and Energy Management Systems are communicated through the iGMS. The HS&E Leader for the Business Unit shall put in place the appropriate mechanisms to ensure that communication between the various departments and projects takes place relating, but not limited, to:

- Significant risks and opportunities
- Environmental incidents, hazards, near misses and complaints
- Changes to the Environmental and Energy Management System
- Audit Results and Trends
- Results of Management Review
- Objectives and Target Results
- Receiving, distributing and responding to communications from interested parties

These will be communicated via HS&E or Environmental Information Notes or HS&E Learning Bulletins, email communications, Sustainability Champions e-Newsletters, relevant Yammer groups; and site visits, inspections or audits.

At this location environmental and energy issues are communicated through a variety of means. ERA engagement; collective insights, inductions, tool box talks, Daily Activity Briefings, weekly progress meetings and sub-contractor tender meetings will all be used on the Project on a regular basis to communicate and discuss the environmental and energy aspects and impacts on the project. Communications from Group or Business Unit environmental and energy leadership will be passed on to site staff/operatives through postings on notice boards, email and face to face meetings as appropriate.

Good and best environmental and energy management practice shall be captured and communicated as a driver for continuous improvement.

External Communication:

All Laing O'Rourke companies will engage with all relevant stakeholders to ensure effective communication with regards its operations. For example, local residents that may be affected by construction works may be notified by letter drops, newsletters or through a project specific website.

Communication with environmental regulators and all enforcement visits or letters shall be formally recorded on the IMPACT database.

The Laing O'Rourke Group has taken the decision not to communicate externally regarding its significant environmental and energy aspects, unless there is a legal requirement to do so.

Contact by the Media

In the event of any contact being made any member of the media [e.g. press, radio or television], immediate reference should be made to:

Laing O'Rourke Press Office

Anchor Boulevard
Dartford
Kent
DA2 6SN

pressoffice@laingorourke.com, 020 8720 6631

6.0 Documentation (ISO14001 Clause 7.5)

The main documents that form this Environmental & Energy Management Plan (EMP) include as appendices:

Environmental Risk Assessment (including an Energy Action Plan when required) (described under section 3., 3.4.1)

Resource Management Plan (described under section 3.1.)

Environmental Emergency Plan (described under section 4.7)

Licences, Permits and Exemptions Register

EnMS Site Energy Review (available on iGMS)

These will be held electronically in an Environmental Management File on the project server, in folder 8.14.

6.1 Control of Documents (ISO14001 Clause 7.5.2 and 7.5.3)

This Environmental & Energy Management Plan shall be reviewed and updated along with the main documents that are integral to the EMP (see section 3.1 Environmental Aspects) the Environmental Risk Assessment (ERA) and Resource Management Plan (RMP) which must be reviewed and updated (as necessary) **every three months** unless otherwise agreed by the BU Environment Leader.

Licences and permits should be reviewed quarterly to check and prepare for expiry dates.

6.2 Control of Records (ISO14001 Clause 7.5.2, 7.5.3)

All records related to this the EMP and environmental and energy management processes will be identified, maintained, controlled and disposed in accordance with the processes within the Environmental Management section of iGMS.

At this location, the EMP, supporting plans, documentation, environmental training records (NOT necessarily TBT's) are held here: server folder, 8.14.

Data relating to water use, waste, and energy use along with incidents will be recorded on IMPACT. Waste tickets will be held in server folder 8.14.3.

The types of EMP related records kept will include but are not be limited to: –

- | | | |
|---|--|-----------------------------|
| • Information on applicable environmental and energy legislation or other requirements | • Information on emergency preparedness and response | • Complaints |
| • Inspection and test reports (e.g. water/air quality/noise) | • Information on significant environmental and/or energy aspects | • Training |
| • Inspection, measuring and test equipment maintenance and calibration | • Incident reports (held on IMPACT) | • Process Information |
| • Records of any visits from enforcing bodies or interest parties (environmentally related) | • Pertinent contractor and supplier information | • Product Information |
| • Environmental management plan and file including associated documentation | • Audit results | • Waste management records |
| • Environmental consents and permits | • Management review | • Energy management records |

7.0 Operational Control (ISO14001 Clause 8.1)

The Laing O'Rourke Project Manager will ensure that appropriate environmental and energy controls are fully implemented. In particular, they will:

- i. Ensure projects are designed and programmed, where possible, with a view to having minimum effect on the environment and energy consumption during construction and after completion of project;
- ii. Ensure that environmental and energy management requirements are controlled through appropriate risk assessments, method statements, and work instructions including those of organisations working on behalf of any Laing O'Rourke company;
- iii. Ensure that procured material minimises harm to the environment and ensures safe movement;
- iv. Ensure that materials are stored to prevent pollution;
- v. Encourage all project personnel (including consultants and sub-contractors) to recycle material, to conserve energy and water, to reduce waste and to protect / enhance biodiversity.
- vi. Ensure site-specific operational and maintenance controls, records and procedures for any significant energy-consuming equipment provided by third party suppliers (i.e. not Select) are maintained locally where provided, and shared with the Energy Management Team upon request.

Evidence of following company operational and maintenance planning procedures may also be required where applicable – further guidance and information is available on iGMS.

7.1 Contaminated Land

The area to the east of the development is known to be highly contaminated. The site has been set up in such a way to ensure that all building works (including construction of the temporary facilities) are kept away from the areas of known contamination. This has included movement of the temporary sports hall and the construction will mean it is 'pinned' into the ground to avoid digging in to the ground.

Ground investigation has been completed for the main construction site, as well as the areas covered by the temporary facilities. To date all samples have returned 'non-hazardous' waste classifications.

All members of the workforce will be briefed on the requirements for identifying and dealing with contamination, including hot spots as well as the contents of the remediation strategy. A verification report will be produced at the end of the phase 1 works (construction of temporary facilities). Any training records will be held on the server in folder 8.14.

7.2 Documented Procedures

The main documented procedures for Environmental and Energy Management are as follows:

- EMP – EMP Summary document (this document)
- ERA – Environmental Risk Assessment
- EAP – Energy Action Plan (embedded in ERA, applicable according to risk/opportunity)
- RMP – Resource Management Plan
- EEP – Environmental Management Plan (can be incorporated into location Fire and Emergency Plan)
- Licences, Permits and Exemptions Register (can be incorporated into this EMP summary document where permitting is minimal)

Environmental Risk Assessment

This procedure is completed via a Collective Insight (H&S Next Gear engagement tool). Facilitated by the Environmental Manager/Coordinator, the Supervisor/Manager responsible for a particular

area of works e.g. Earthworks or Logistics, as a minimum (ideally people 'doing' the work should be involved) will discuss the work activities and the potential risks and impacts associated with that work. Together they will build the ERA for that with a look 3-6 month look ahead.

A risk rating is assigned before any control measures or mitigation have been considered and then once these measures have been applied as residual risk rating remains. These are assigned as Red for high risk, Amber for medium risk and Green for low or minimal risk. Not all residual risk will revert to Green. Anything remaining at Amber once all reasonable mitigation has been applied, will need particular care and attention and therefore actions relating to items like this will require more consideration by Supervision.

Any activity considered to be particularly high risk will be communicated with project management for inclusion in the **project risk register**. This may even include BREEAM and contaminated land requirements as these are often contractual requirements. Also delivery of low embodied carbon/procurement of locally sourced materials may fall into this category.

The Energy Action Plan is contained within the ERA document. This should be completed when there are any opportunities or risks identified through the location specific ERA process or related energy performance monitoring, or when it is driven by a specific stakeholder requirement.

Resource Management Plan

Waste is a significant environmental aspect of construction activity and as such is dealt with as a specific subject using a RMP (Resource Management Plan). The RMP is an integral part of this EMP (as an appendix) and is also referenced in the Environmental Risk Assessment (ERA).

The Resource Management Plan is a mandatory Laing O'Rourke document on projects. The RMP details the location waste targets (including recovery and re-use) and responsibilities for waste disposal. All waste generated will be taken away by licensed carriers to licensed tips. All waste transfer documentation e.g. transfer notes / consignment notes will include the appropriate six-digit EWC code and the SIC code.

Trade Contractors (especially those responsible for their own waste disposal) must provide Laing O'Rourke with all/any relevant licences and Duty of Care documents.

Waste data records will be maintained on the project on IMPACT. At the end of the project all waste dockets will be kept and archived for a minimum of two years for general waste and three years for hazardous waste.

Environmental Emergency Plan

Key 'typical' emergency actions are embedded into the ERA (Environmental Risk Assessment.) The Environmental Emergency Plan also considers contingency planning where the risks are more significant. At this location we are using the EEP.

Licences, Permits and Exemptions Register

A list of permits / consents / exemptions and licences other than waste (e.g. pollution control, exemption certificates, discharge, works near watercourses, random licence checks etc.) will be maintained. It is recommended where there are many location specific permits that a quarterly check is done to ensure any expiration dates are captured early. The frequency of checking can be changed and will be noted in the Monitoring / Inspection Routine (section 9.1 of this EMP).

Where there are very few permits/consents or the number reduces, this 'register' can be incorporated into this EMP summary document in this section of the EMP.

Energy Management System Manual

This provides procedure for planning, monitoring, managing, measuring and reporting on energy performance, use, objectives and targets. It is supported by a range of documents referenced

throughout the manual and links into existing EMS documentation, some of which are list above. The manual is available on iGMS and should be referred to when considering energy efficiency and management throughout a project's lifecycle.

8.0 Emergency Preparedness and Response (ISO14001 Clause 8.2)

A full Environmental Emergency Plan (EEP) is provided as part of this EMP in the appendices. All Environmental and/or Energy-Related incidents, however small, will be recorded on IMPACT – under 'Environmental Incidents'. They will also be recorded on our monthly environmental reports for the Client if required.

Site plans indicating the location of drainage and also of spill kits will be kept in the Environmental Management File, but where risk is significant, will also be displayed as appropriate on the noticeboards on site with the Fire & Emergency plans.

The ERA (Environmental Risk Assessment) also includes some high level emergency actions.

It is imperative that the emergency response plan is tested. Training how to deal with spills is not the same as testing the effectiveness of the plan. As a minimum, spill drills (other types of drill could be simulated) should be carried out at least annually if no incidents have occurred on site in the interim period. If there is not risk of spills, the EMP will reflect this in the deviations section.

9.0 Checking (ISO14001 Clause 9)

9.1 Monitoring & Measurement (ISO 14001 Clause 9.1)

The EMP shall identify how the applicable environmental and energy aspects of the project / location will be monitored (e.g. visual inspection, tests or reports, metering) and the frequency that such monitoring will be undertaken.

All operations and activities having a significant impact on the environment and energy performance shall be regularly monitored and measured.

Any equipment used to monitor or measure shall be checked and calibrated to ensure results are reliable. Records of maintenance and calibration shall be retained and kept in the Environmental Management File.

Minimum Inspection/Monitoring/Activity for:	
Location:	Abraham Moss Leisure Centre

Activity	Weekly	Monthly	Quarterly	6 Month	Annually	As & when required
Waste info input to IMPACT (Also checking info on dockets, chasing waste reports)		X				
Water benchmark monitoring (data on Impact)		X				
Energy consumption monitoring (data on Impact)		X				
Environmental Inspection on IMPACT		X				

Environmental Incidents						X
Review of permits, licences and legislation			X			
EMS Audit and EnMS Audit (carried out by Head Office Team / Lead Auditors)					X	
<i>Environmental NCR's (to be reviewed to maintain corrective action)</i>						X
<i>Waste procedure re-briefs (WTN completion AND management)</i>						X

Red are mandatory monitoring or completion requirements

9.2 Visit by Statutory Bodies / Interested Parties

During the lifetime of the project there may be a number of visits from statutory bodies including water authorities, Environment Agency, local authorities, HSE etc. Some visits will be scheduled and part of ongoing monitoring against consents or permits. Other visits will be a response to a perhaps a concern from that body or in response to a complaint from the public or another party.

All visits - unscheduled (responsive= Incident Reporting) and scheduled (monitoring = Visits) will be recorded on IMPACT. All records/documents/emails relating to these visits should be uploaded to IMPACT with the record of attendance.

9.3 Evaluation of Legal Compliance (ISO14001 Clause 9.1.2)

The Laing O'Rourke group Legal Register is maintained and held on the EMS. At a location legal compliance will be evidenced through fulfilment of the permitting, consents and licence (and sometimes planning conditions) requirements applicable to that location as well as testing and related records and inspection/audit. Evaluation is carried out at:

Operational level:

- Regular or mandatory inspections and/or tours as defined in the monitoring routine above.
- The monitoring and testing that is required to comply with any consents or permits and related record keeping (e.g. ph testing, notch gauge readings, noise monitoring, meter readings)
- Potentially audit or inspection (not a formal process) of the location or of any supply chain that contribute to compliance with consents, licences or permits.
- External visits from issuing bodies or contractual parties (e.g. water authorities, local authorities, EA, Client etc).

Function or Business Unit level:

- Audits, in accordance with the EMS and EnMS
- Management Review in accordance with the iGMS and Environmental/Energy Management review processes.

All records of evaluation will be maintained, controlled and disposed of in accordance with EMS and EnMS requirements.

The validity of environmental licences and permits within England and Wales can be verified from the Public Register which can be accessed from the Environment Agency's website:

<http://www2.environment-agency.gov.uk/epr/>

For requirements in Scotland please refer to: <http://www.netregs.org.uk/>

Wales also have their own resource:

<http://naturalresources.wales/how-we-regulate-you/find-out-if-a-site-has-a-permit-licence-or-exemption/?lang=en>

9.4 Non-Conformance, Corrective & Preventative Action (ISO14001 Clause 9.1.2)

Non-conformances can be raised as part of any internal or external inspection, audit or informal visit or tour in order to raise the profile and importance of a particularly significant environmentally or energy related issue on site.

All environmental and energy non-conformances raised during an Internal EMS/EnMS Audit or external Accreditation body (BSI/Achilles) will be closed out within good time (generally no later than one month). Failure to comply with the timescales for closing out actions will be notified to the Business Unit HS&E Leaders with persistent issues being reported to the Head of HS&E and relevant BU Leaders.

Environmental hazards, near misses and incidents shall all be recorded on the IMPACT database. The categorisation of environmental incidents is

- Category 1 - significant environmental impact requiring clean up or substantive action; legislation breach;
- Category 2 - significant environmental impact with more limited clean up/action; possible legislative breach
- Category 3 - small spills, emissions, that cause no environmental impact (examples: hydraulic hose burst on tarmac; noise complaint where no restrictions);

Category 1 & 2 incidents shall be communicated to HS&E Leaders and will be investigated, actions assigned and close out expected.

In the event of a significant pollution incident, it is essential that the Project Manager and BU HS&E Leader be informed immediately, so that they can contact the relevant regulator if required.

All projects and facilities are required to implement pollution prevention measures, to minimise the risk of their activities impacting on the environment.

10.0 Internal Audit (ISO14001 Clause 9.2)

The number of internal audits against the Environmental and Energy Management Systems implementation depends (see EM/EnM Manual) on the risk, size and duration of the project. Where possible, the environmental/energy review will form part of the Integrated Management System Audits however as these do not happen on every project, the Central HS&E team will ensure that all projects are at least annually audited against the EMS and EnMS (where applicable).

The Central HS&E team has supplied an audit schedule identifying the locations provisional auditing dates. All environmental and energy audits are carried out in accordance with the EMS and EnMS audit process.

Results of audit are shared with the project team and any significant findings (positive or negative) and best practice shared with the HS&E or BU Leadership as appropriate.

11.0 Management Review (ISO14001 Clause 9.3)

There are no actions for projects except to provide any information requested. It is the responsibility of the Business Unit HS&E Leaders to ensure that the effectiveness of the environmental and energy management systems is reviewed so that they continue to reflect accurately the organisation and environmental and energy management practices as applied to all Laing O'Rourke businesses.

BU Management Reviews will be carried out in the group HQ's and communicated out as appropriate.

The items listed below as a minimum will be considered in the review:

1. Results of internal audits including evaluations of compliance with legal requirements and other applicable requirements
2. Communication from interested parties including complaints
3. Evaluation/trend analysis of environmental and energy incidents and audit findings
4. Environmental and energy performance
5. The extent to which objectives and targets have been met
6. Non-conformance, corrective and preventive actions
7. Results of the previous management review
8. Changing circumstances (which includes developments in legal and other requirements related to environmental and energy aspects)
9. Recommendations for improvement

Results of these reviews will be analysed by the Central HS&E and Energy Management teams and any resulting actions or amendments to the EMS, EnMS or related policy or procedures will then be signed off by the HS&E or Technical Directors on an annual basis.

Actions arising from Management Review will be communicated to projects as appropriate as they may affect or require changes to the EMP and related objectives, targets or controls measures.

APPENDICES

APPENDIX A - ENVIRONMENTAL RISK ASSESSMENT

APPENDIX B - RESOURCE MANAGEMENT PLAN

APPENDIX C - LICENCES, PERMITS AND EXEMPTIONS

APPENDIX D - ENVIRONMENTAL EMERGENCY AND CONTINGENCY PLAN

APPENDIX D

V4: TOPSOIL DOCUMENTATION



Certificate of Analysis

Originator: TOPSOIL
SOIL

Lab ID: 51693 - 603032
Sample ID: TOPSOIL B
Sample Weight: 889g

Date Reported: 25/01/2023

BS 3882 : 2015 SPECIFICATION FOR TOPSOIL Multipurpose Grade

				Compliant with range (Y/N)					
				Multi-P	Acid	Calc	Low-F	Low-F Acid	Low-F Calc
		Unit	Result						
Texture:	Clay	% w/w	8						
	Silt	% w/w	8						
	Sand	% w/w	84						
	Textural Class		Loamy Sand	Y	Y	Y	Y	Y	Y
Organic Matter:		% w/w	4.5	Y	Y	Y	Y	Y	Y
Coarse Fragment Content:	>2 mm	% w/w	1.6	Y	Y	Y	Y	Y	Y
	>20 mm	% w/w	0.0	Y	Y	Y	Y	Y	Y
	>50 mm	% w/w	0.0	Y	Y	Y	Y	Y	Y
Soil pH:			8.2	Y	N	Y	Y	N	Y
Carbonate:		% w/w	6.2			Y			Y
Available Plant Nutrients:	Nitrogen	% w/w	0.305	Y	Y	Y			
	Phosphorus	mg/l	45.4 (3)*	Y	Y	Y	N	N	N
	Potassium	mg/l	727.1 (5)*	Y	Y	Y			
	Magnesium	mg/l	123.8 (3)*	Y	Y	Y			
Carbon:Nitrogen Ratio:		:1	8.6	Y	Y	Y	Y	Y	Y
Exchangeable Sodium Percentage:		%	6.0						
Phytotoxic Contaminants:	Total Zinc	mg/kg	61.5	Y	Y	Y	Y	Y	Y
	Total Copper	mg/kg	16.7	Y	Y	Y	Y	Y	Y
	Total Nickel	mg/kg	<10	Y	Y	Y	Y	Y	Y
Visible Contaminants:	> 2mm	% w/w	0.03	Y	Y	Y	Y	Y	Y
	Plastics	% w/w	0.00	Y	Y	Y	Y	Y	Y
	Number of Sharps		0	Y	Y	Y	Y	Y	Y
Additional Analysis:	Available Sodium	mg/l	142.0						
	Available Calcium	mg/l	1345.3						
	Conductivity	uS/cm	2899	Y					
Compliance:				Y	N	Y	N	N	N

Results are expressed on a dry matter basis.

* Soil indices from RB209

Released by:

Myles Nicholson

Date: 25/01/2023

DECLARATION:

I certify that this sample has been analysed by NRM in accordance with BS 3882 Specification for Topsoil (2015).

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 Fax: +44 (0) 1344 890972 Email: enquiries@nrm.uk.com www.nrm.uk.com



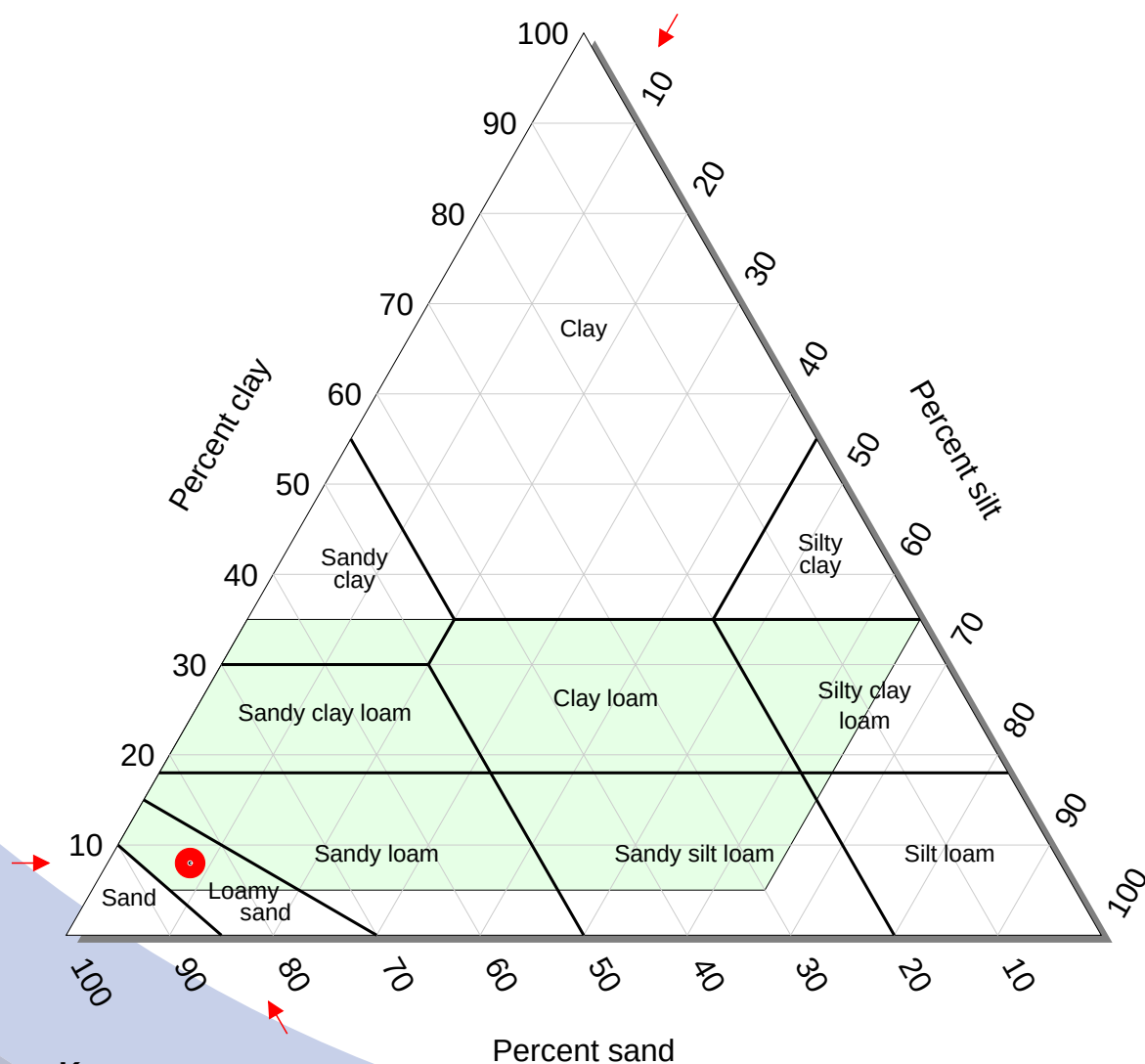
Analytical Report

Originator: TOPSOIL
SOIL

Lab ID: 51693 - 603032
Sample ID: TOPSOIL B
Sample Weight: 889g

Date Reported: 25/01/2023

Fig. 1. Textural Class: Loamy Sand (compliant)



Key



Area within which texture of topsoil is required to fall.



Certificate of Analysis

Client: STUART BALDWIN
(T283) SED SERVICES LTD
LANDGATE FARM
LANDGATE LANE
BRYN
WIGAN WN4 0EJ

Originator: SOIL

Lab ID: 67969 - 625013
Sample ID: SED BRYN
Sample Weight: 930g

Date Received: 19/04/2023
Date Reported: 27/04/2023

BS 3882 : 2015 SPECIFICATION FOR TOPSOIL Multipurpose Grade

				Compliant with range (Y/N)					
				Multi-P	Acid	Calc	Low-F	Low-F Acid	Low-F Calc
Texture:	Clay	% w/w	9						
	Silt	% w/w	7						
	Sand	% w/w	84						
	Textural Class		Loamy Sand	Y	Y	Y	Y	Y	Y
					See area of permitted soil textural classes in Fig. 1.				
Organic Matter:		% w/w	7.9	Y	Y	Y	Y	Y	Y
Coarse	>2 mm	% w/w	2.9	Y	Y	Y	Y	Y	Y
Fragment	>20 mm	% w/w	0.7	Y	Y	Y	Y	Y	Y
Content:	>50 mm	% w/w	0.0	Y	Y	Y	Y	Y	Y
Soil pH:			8.2	Y	N	Y	Y	N	Y
Carbonate:		% w/w	15.4			Y			Y
Available	Nitrogen	% w/w	0.342	Y	Y	Y			
Plant	Phosphorus	mg/l	57.4 (4)*	Y	Y	Y	N	N	N
Nutrients:	Potassium	mg/l	1201.3 (6)*	Y	Y	Y			
	Magnesium	mg/l	186.1 (4)*	Y	Y	Y			
Carbon:Nitrogen Ratio:		:1	13.4	Y	Y	Y	Y	Y	Y
Exchangeable Sodium Percentage:		%	6.6						
Phytotoxic	Total Zinc	mg/kg	94.7	Y	Y	Y	Y	Y	Y
Contaminants:	Total Copper	mg/kg	28.0	Y	Y	Y	Y	Y	Y
	Total Nickel	mg/kg	12.5	Y	Y	Y	Y	Y	Y
Visible	> 2mm	% w/w	0.00	Y	Y	Y	Y	Y	Y
Contaminants:	Plastics	% w/w	0.00	Y	Y	Y	Y	Y	Y
	Number of Sharps		0	Y	Y	Y	Y	Y	Y
Additional	Available Sodium	mg/l	203.5						
Analysis:	Available Calcium	mg/l	1582.9						
	Conductivity	uS/cm	3027	Y					
Compliance:				Y	N	Y	N	N	N

Results are expressed on a dry matter basis.

* Soil indices from RB209

Released by:

Daniel Petty

Date: 27/04/2023

DECLARATION:

I certify that this sample has been analysed by NRM in accordance with BS 3882 Specification for Topsoil (2015).

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS

Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www:** www.nrm.uk.com



Analytical Report

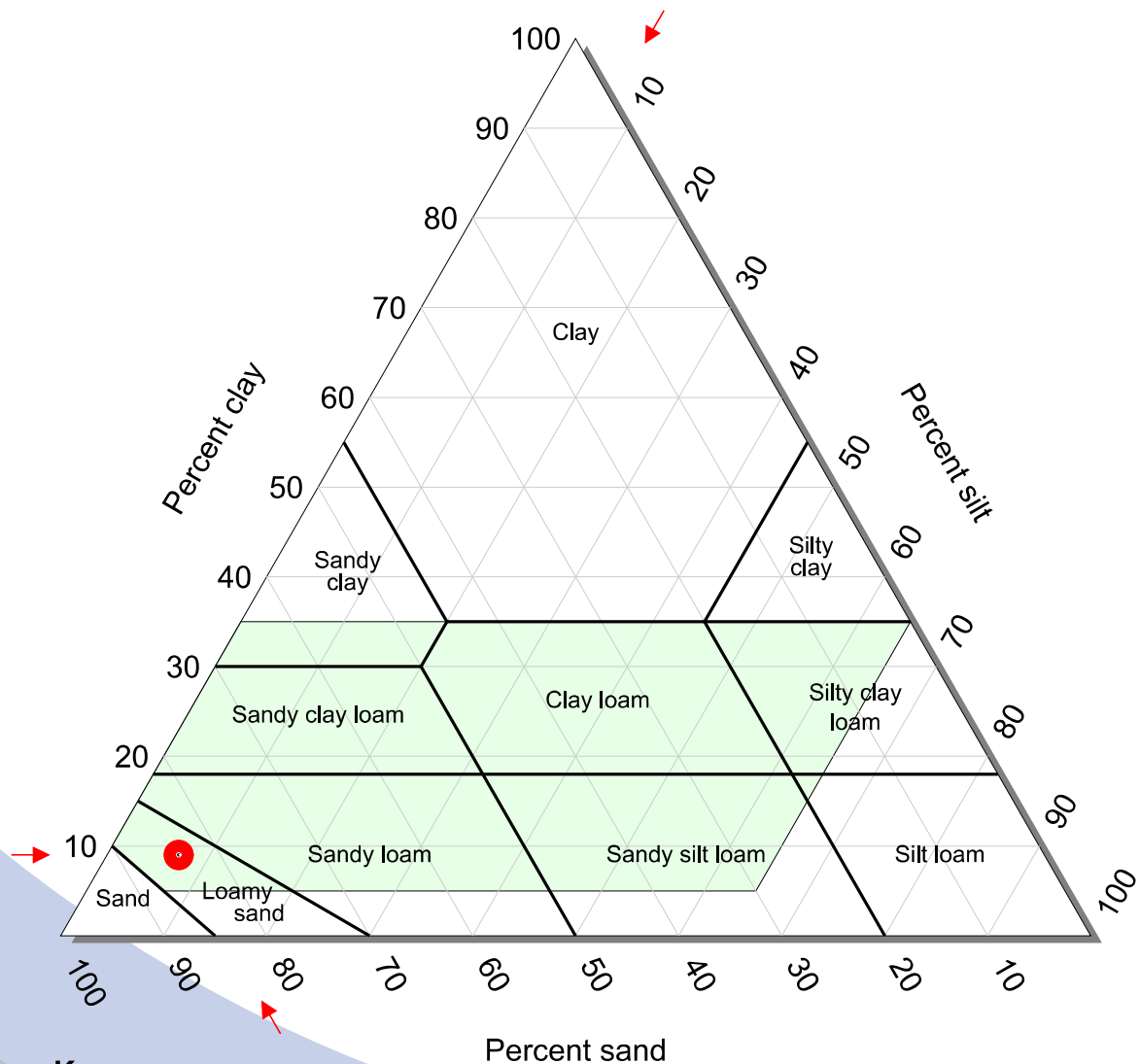
Client: STUART BALDWIN
(T283) SED SERVICES LTD
LANDGATE FARM
LANDGATE LANE
BRYN
WIGAN WN4 0EJ

Originator: SOIL

Lab ID: 67969 - 625013
Sample ID: SED BRYN
Sample Weight: 930g

Date Received: 19/04/2023
Date Reported: 27/04/2023

Fig. 1. Textural Class: Loamy Sand (compliant)



Key



Area within which texture of topsoil is required to fall.