

Appendix F - Groundwater Chemical Analysis Results

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Analytical Report Number : 23-14320

Project / Site name:	Stakehill	Samples received on:	27/01/2023
Your job number:	554769	Samples instructed on/ Analysis started on:	27/01/2023
Your order number:	DS72083	Analysis completed by:	01/02/2023
Report Issue Number:	1	Report issued on:	01/02/2023
Samples Analysed:	2 water samples		


Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Project / Site name: Stakehill

Lab Sample Number				2566884	2566885
Sample Reference				CP101	DS104
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				25/01/2023	25/01/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

pH (L005B)	pH Units	N/A	ISO 17025	8.0	7.1
Sulphate as SO ₄	µg/l	45	ISO 17025	216000	111000

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16
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Chromium (hexavalent)	µg/l	5	ISO 17025	9.1	9.3
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Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.14	0.51
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.06
Chromium (dissolved)	µg/l	0.2	ISO 17025	9.3	8.9
Copper (dissolved)	µg/l	0.5	ISO 17025	2.1	2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.2	4.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	1.3	3.2

Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0

TPH-CWG - Aliphatic >C5 - C6 _{HS, 1D, AL}	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS, 1D, AL}	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS, 1D, AL}	µg/l	1	ISO 17025	< 1.0	< 1.0
Aliphatic >C10 - C12 _{EH, 2D, AL #1 #2}	µg/l	10	ISO 17025	< 10	< 10



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Analytical Report Number: 23-14320

Project / Site name: Stakehill

Your Order No: DS72083

Lab Sample Number				2566884	2566885
Sample Reference				CP101	DS104
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				25/01/2023	25/01/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
Aliphatic >C12 - C16 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aliphatic >C16 - C21 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aliphatic >C21 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aliphatic >C10 - C35 _{EH_2D_AL_#1_#2}	µg/l	10	ISO 17025	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0

Aromatic >C10 - C12 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aromatic >C12 - C16 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aromatic >C16 - C21 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aromatic >C21 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	< 10
Aromatic >C10 - C35 _{EH_2D_AR_#1_#2}	µg/l	10	ISO 17025	< 10	< 10

VOCs

Chloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Chloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Bromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Vinyl Chloride	µg/l	3	NONE	< 3.0	< 3.0
Trichlorofluoromethane	µg/l	3	NONE	< 3.0	< 3.0
1,1-Dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Cis-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
2,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0
Trichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1,1-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2-Dichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1-Dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0
Trans-1,2-dichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Tetrachloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0
Trichloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0
Dibromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Bromodichloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Cis-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0
Trans-1,3-dichloropropene	µg/l	3	ISO 17025	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1,2-Trichloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,3-Dichloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0
Dibromochloromethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Tetrachloroethene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2-Dibromoethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Chlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,1,1,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
p & m-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0
Styrene	µg/l	3	ISO 17025	< 3.0	< 3.0
Tribromomethane	µg/l	3	ISO 17025	< 3.0	< 3.0
o-Xylene	µg/l	3	ISO 17025	< 3.0	< 3.0



4041



Analytical Report Number: 23-14320

Project / Site name: Stakehill

Your Order No: DS72083

Lab Sample Number				2566884	2566885
Sample Reference				CP101	DS104
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				25/01/2023	25/01/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
1,1,2,2-Tetrachloroethane	µg/l	3	ISO 17025	< 3.0	< 3.0
Isopropylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Bromobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
n-Propylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
2-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0
4-Chlorotoluene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,3,5-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
tert-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2,4-Trimethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
sec-Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,3-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
p-Isopropyltoluene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,4-Dichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Butylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2-Dibromo-3-chloropropane	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2,4-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Hexachlorobutadiene	µg/l	3	ISO 17025	< 3.0	< 3.0
1,2,3-Trichlorobenzene	µg/l	3	ISO 17025	< 3.0	< 3.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-14320

Project / Site name: Stakehill

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
TPH C10-C35 by GCxGC-FID	Determination of total petroleum hydrocarbons in water by GC x GC FID with carbon banding aliphatic and aromatic C10-C35. Accredited Matrices SW,GW,PW.	In-house method	L101B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

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

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted

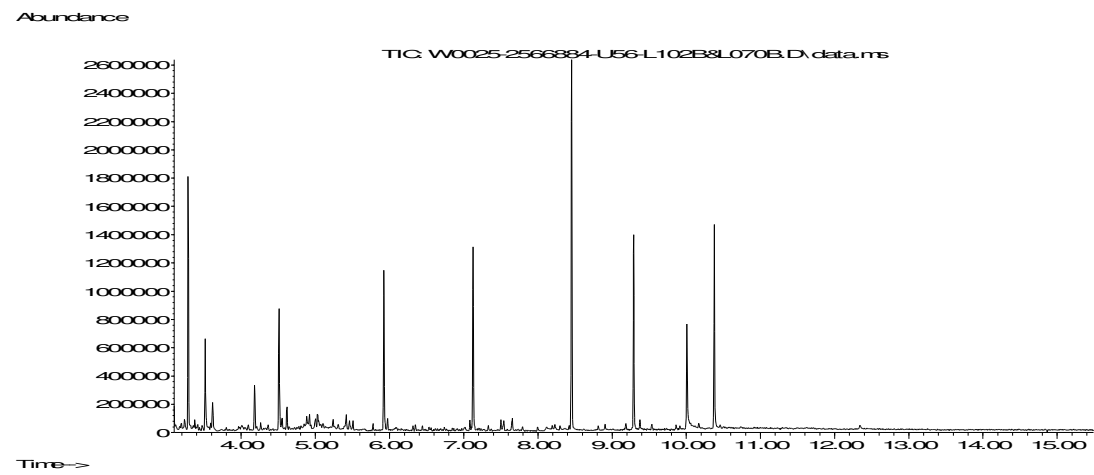


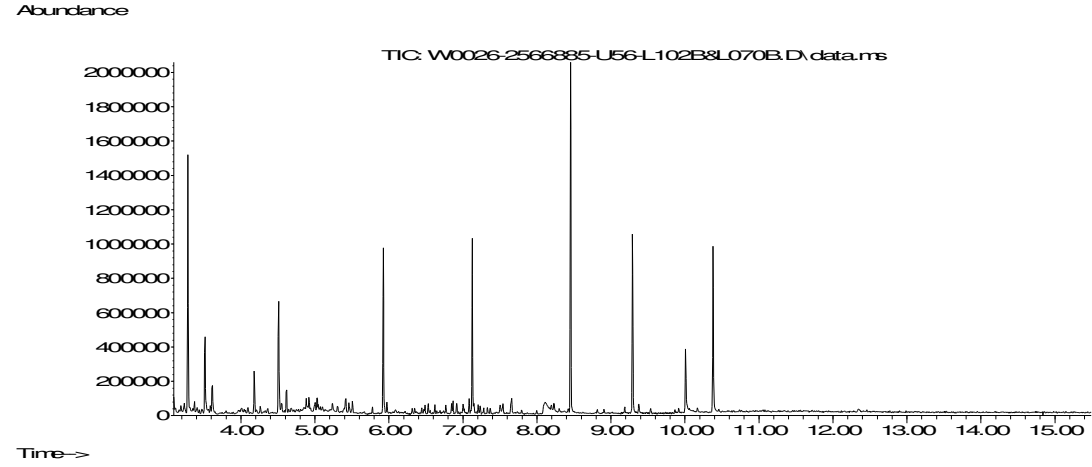
Analytical Report Number : 23-14320
Project / Site name: Stakehill

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Operator - understore to separate acronyms (exception for +)					
Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total					





Appendix G - Field Monitoring Data/Gas Monitoring Data/Falling Head Test Data

[illegible]

[illegible]

[illegible]

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Appendix H - BRE365 Infiltration Test Results

	units	Infill 1	Infill 2	Infill 3
Length	m	2.70		
Width	m	0.60		
Depth	m	1.80		
Gravel type		20mm single size		
Voids ratio		0.40		
Resting groundwater level at time of testing	m	2.45		
Depth of first reading	m	1.32	1.00	1.00
Depth of final reading	m	1.32	2.00	1.33
Did soakage test reach 25% of maximum fill depth?		No	Yes	No
Did soakage test reach near empty?		No	Yes	No
Depth at 75% full/effective depth	m	1.32	1.20	1.08
Depth at 25% full/effective depth	m	1.32	1.60	1.25
Time at 75% full/effective depth	mins	#DIV/0!	8.93	3.63
Time at 25% full/effective depth	mins	#DIV/0!	27.40	11.10
Vp75 - 25 (volume outflowing between 75% and 25% full/effective depth)	m ³	0.00	0.26	0.11
Mean surface area for outflow (50% full/effective depth)	m ²	1.62	4.26	2.71
tp75 (time for the water level to fall from 75% to 25% full/effective depth)	mins	#DIV/0!	18.47	7.47
Soil infiltration rate, f =	m/s	Failed Test	0.00005491	Failed Test
or	m/s	Failed Test	5.5E-05	Failed Test

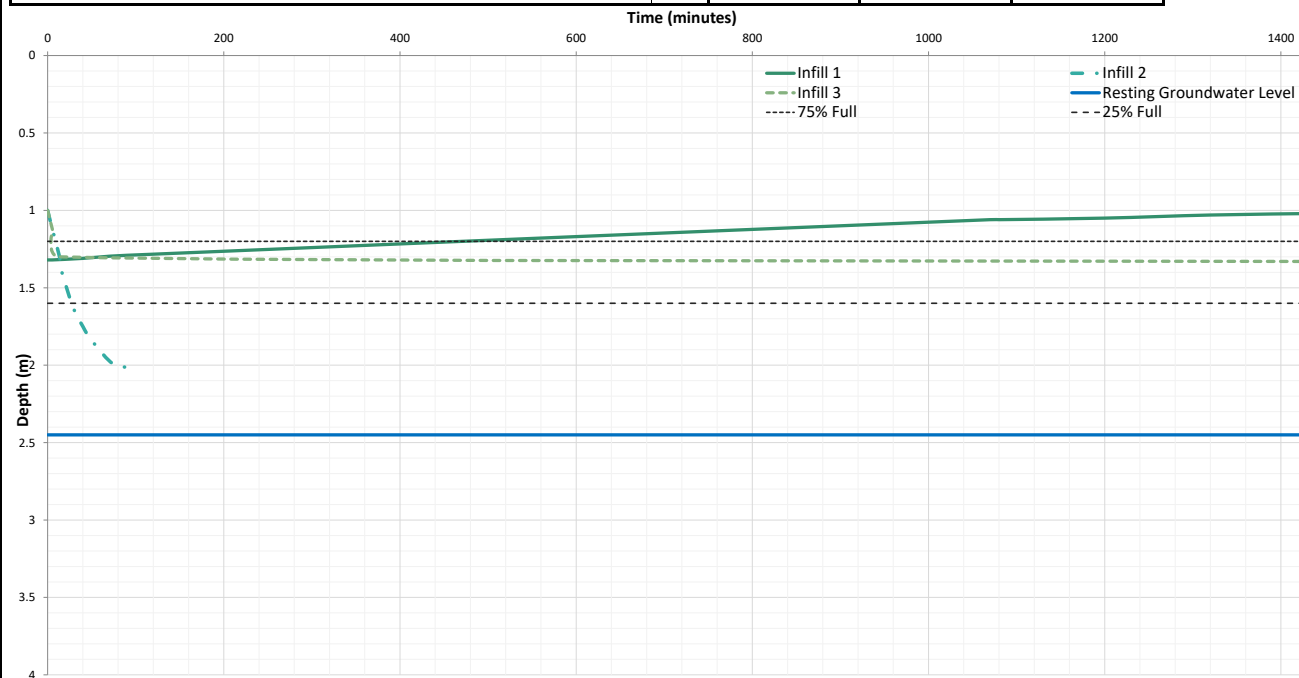
Recommended soil infiltration rate

Failed Test

m/s

Note:

Where water level reaches nearly empty (5% full), soil infiltration based on '**Full**' depth. Where water level did not reach nearly empty (5% full), soil infiltration rate is based on '**Effective**' drainage achieved only. Where water level did not fall below 25% of the maximum fill level, this is considered to be a '**Failed**' test.



LOG	DEPTH (m)	BACKFILL	DEPTH (m)
Concrete	0.0	Arisings	0.0
Clayey sandy GRAVEL	0.2		
Orangish brown SILT	0.6		
		Gravel	1.0
			1.8
	1.9		



TITLE: Soakaway Test Results
Wigan Road Farm, Golborne
Company A

In accordance with BRE Digest 365 (2016)

DRAWN BY: CB
CHECKED BY: SS
DATE: 07/03/2022

SCALE: Not to Scale

REVISION: 1

PROJECT NUMBER:
21-0993.06

SOAKAWAY NUMBER:
SA101

	units	Infill 1	Infill 2	Infill 3
Length	m	1.80		
Width	m	0.60		
Depth	m	1.80		
Gravel type		20mm single size		
Voids ratio		0.40		
Resting groundwater level at time of testing	m	-		
Depth of first reading	m	0.60	0.00	0.00
Depth of final reading	m	0.62	0.00	0.00
Did soakage test reach 25% of maximum fill depth?		No	No	No
Did soakage test reach near empty?		No	No	No
Depth at 75% full/effective depth	m	0.61	0.00	0.00
Depth at 25% full/effective depth	m	0.62	0.00	0.00
Time at 75% full/effective depth	mins	1.50	#N/A	#N/A
Time at 25% full/effective depth	mins	5.50	#N/A	#N/A
Vp75 - 25 (volume outflowing between 75% and 25% full/effective depth)	m ³	0.00	0.00	0.00
Mean surface area for outflow (50% full/effective depth)	m ²	1.13	1.08	1.08
tp75 (time for the water level to fall from 75% to 25% full/effective depth)	mins	4.00	#N/A	#N/A
Soil infiltration rate, f =	m/s	Failed Test	Failed Test	Failed Test
or	m/s	Failed Test	Failed Test	Failed Test

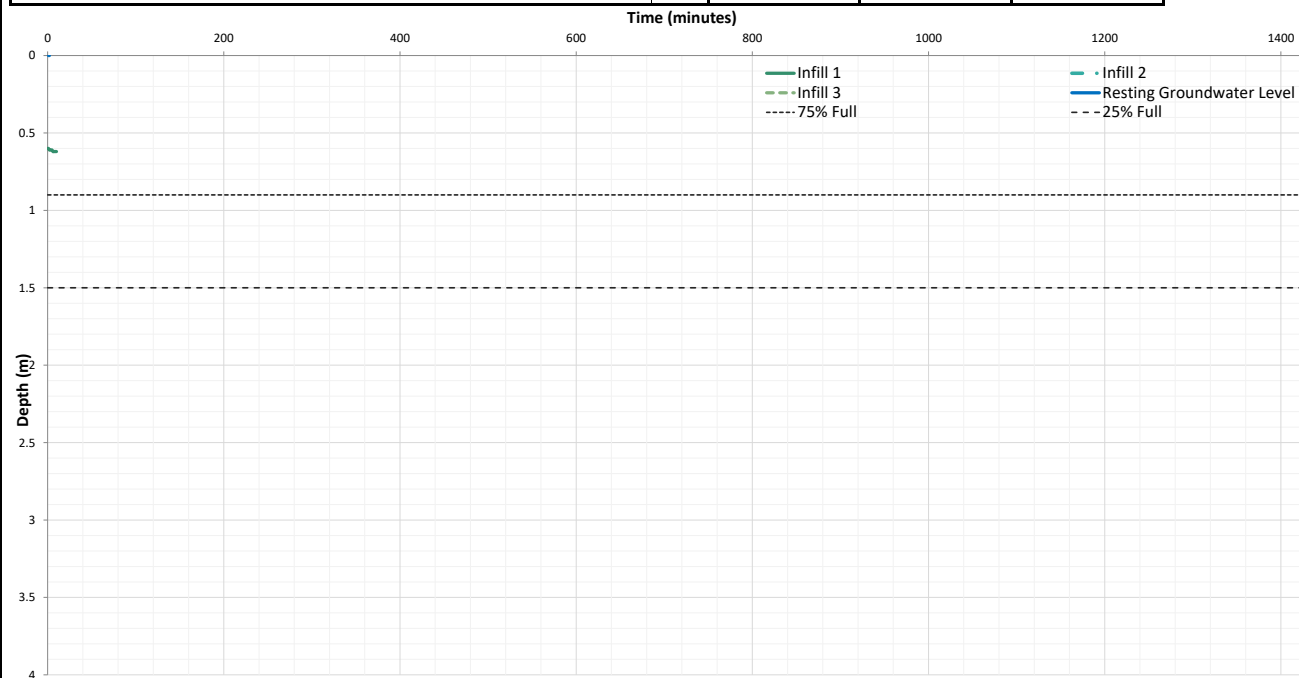
Recommended soil infiltration rate

Failed Test

m/s

Note:

Where water level reaches nearly empty (5% full), soil infiltration based on 'Full' depth. Where water level did not reach nearly empty (5% full), soil infiltration rate is based on 'Effective' drainage achieved only. Where water level did not fall below 25% of the maximum fill level, this is considered to be a 'Failed' test.



LOG		BACKFILL	
	DEPTH (m)		DEPTH (m)
Tarmac	0.0	Arisings	0.0
Concrete	0.1		
Sandy gravelly COBBLES	0.4		
Brown loose silty SAND	0.6	Gravel	0.6
Brown sandy CLAY	1.1		
	1.8		1.8



TITLE: Soakaway Test Results
Stakehill Ind Estate
Company A

In accordance with BRE Digest 365 (2016)

DRAWN BY: CB
CHECKED BY: SS
DATE: 15/02/2023

SCALE: Not to Scale

REVISION: 1

PROJECT NUMBER:
90720.55

SOAKAWAY NUMBER:
SA103

Appendix I – Risk Definitions

Contaminated Land Risk Definitions

The following methodology is based on the methodology presented in CIRIA C552 Contaminated Land Risk Assessment: A Guide to Good Practice 2001. It requires the classification of the:

- Magnitude of the potential consequence (severity) of the Risk occurring; and
- Magnitude of the Probability (likelihood) of the Risk occurring.

The classifications are then compared to indicate the risk presented by each pollutant linkage.

Consequence to Receptor Definition Matrix

	Human Health	Controlled Waters	Buildings/Services
Severe Consequence	Acute or chronic permanent impact on human health.	Sensitive controlled water pollution ongoing, or just about to occur.	Catastrophic collapse
Medium Consequence	Chronic permanent impact on human health	Gradual pollution of sensitive controlled water	Degradation of materials
Mild Consequence	Chronic temporary impact on human health	Gradual pollution of non-sensitive controlled water	Damage to building rendering it unsafe to occupy (eg foundation damage resulting in instability).
Minor Consequence	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc).	Slight discoloration of water	Easily repairable effects of damage to buildings, structures and services, i.e discoloration of concrete

Probability Definitions

Probability	Definition in Context
Higher	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution. Positive evidence of source, pathway and receptor.
Likely	There is a pollution 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. Suspect source, pathway, and receptor
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term No evidence of hazard, pathway, and receptor

Standard Risk Matrix

		Consequence/Magnitude of impact			
		Severe	Medium	Mild	Minor
Probability	High	Very High	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/low	Low
	Low Likelihood	Moderate	Moderate/low	Low	Very Low
	Unlikely	Moderate/low	Low	Very Low	Very Low

Classified risks and likely action

Significance Level	Definition/Comments
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required. Demonstrable contaminated land situation, highest threat & liability level, urgent action recommended.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term. Likely contaminated land situation, risk assessment and action recommended.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, if it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term. Plausible contaminated land situation, risk assessment and possible action recommended.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild. Unlikely contaminated land situation, possible risk assessment and possible action.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe. Negligible risk, no action recommended except vigilance for changes in conditions.

Geotechnical Risk Classification

The geohazards listed in the report within Section 4 follow guidance presented in Clayton, C.R.I. (2001) *Managing Geotechnical Risk*, Thomas Telford and the National Highways document CD622 '*Managing Geotechnical Risk*' (2020) which aims to identify and manage the geotechnical risks associated with a scheme throughout its lifespan, from planning to construction to maintenance.

For each geohazard the probability of the hazard occurring (P) has been considered together with the impact it would have (I) if it were to happen to calculate the risk rating between 1 and 25.

Risks that fall within Moderate, Significant and Severe categories below are considered to be **substantial** and are therefore listed within the report.

Probability	(P)	X	Impact	(I)	=	(R)	Risk
Very Likely (VLk)	5		Very High (VH)	5		20 – 25	Severe
Likely (Lk)	4		High (H)	4		15 – 19	Substantial
Plausible (P)	3		Medium (M)	3		10 – 14	Moderate
Unlikely (U)	2		Low (L)	2		5 – 9	Minor
Very Unlikely (VU)	1		Very Low (VL)	1		1 – 4	Negligible