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Analytical Report Number : 23-39415

Project / Site name:	Jarrow Stockpile Assessment	Samples received on:	14/06/2023
Your job number:	GCU0208012	Samples instructed on/ Analysis started on:	14/06/2023
Your order number:	GCU0208012	Analysis completed by:	22/06/2023
Report Issue Number:	1	Report issued on:	22/06/2023
Samples Analysed:	3 soil samples		

Signed:

Elżbieta Suchy
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

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Lab Sample Number				2714771	2714772	2714773
Sample Reference				SP3 - A	SP3 - B	SP3 - C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023
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	13	16	13
Total mass of sample received	kg	0.001	NONE	1.4	0.6	0.6

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	8	8
Total Sulphate as SO ₄	%	0.005	MCERTS	0.253	0.453	0.249
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.1	2.2	2.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.23	1.2	0.2
Acenaphthylene	mg/kg	0.05	MCERTS	0.28	0.2	0.09
Acenaphthene	mg/kg	0.05	MCERTS	0.1	0.35	0.09
Fluorene	mg/kg	0.05	MCERTS	0.16	0.32	0.13
Phenanthrene	mg/kg	0.05	MCERTS	1.7	3.7	1.3
Anthracene	mg/kg	0.05	MCERTS	0.58	0.76	0.33
Fluoranthene	mg/kg	0.05	MCERTS	7.2	5.4	2.6
Pyrene	mg/kg	0.05	MCERTS	6	4.2	2.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.4	2.8	1.4
Chrysene	mg/kg	0.05	MCERTS	3.9	2.2	1.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	5	2.7	1.7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.3	0.92	0.53
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.7	1.8	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	1.1	0.75
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.56	0.32	0.19
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.5	1.2	0.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	41	29	14.7
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	26	22	25
Barium (aqua regia extractable)	mg/kg	1	MCERTS	280	270	240
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5	1.5	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3	2.4	2.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	46	54	65
Copper (aqua regia extractable)	mg/kg	1	MCERTS	120	100	100
Lead (aqua regia extractable)	mg/kg	1	MCERTS	270	310	260
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.5	1.2
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	43	45	40
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	83	92	150
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	300	310	290

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Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	4.3	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	9.4	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	30	58	11
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	< 10	16	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	13	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	36	< 10	15
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	99	110	39

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Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

VOCs

Chloromethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Dibromomethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,3-dichloropropene##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Ethylbenzene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Styrene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
o-Xylene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Isopropylbenzene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
n-Propylbenzene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trimethylbenzene#	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

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Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane# #	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

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Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	13/06/2023	13/06/2023	13/06/2023
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.23	1.2	0.2
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	0.8	0.2
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.28	0.2	0.09
Acenaphthene	mg/kg	0.05	MCERTS	0.1	0.35	0.09
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	0.7	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.16	0.32	0.13
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.7	3.7	1.3
Anthracene	mg/kg	0.05	MCERTS	0.58	0.76	0.33
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	0.4	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	7.2	5.4	2.6
Pyrene	mg/kg	0.05	MCERTS	6	4.2	2.1
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.4	2.8	1.4
Chrysene	mg/kg	0.05	MCERTS	3.9	2.2	1.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	5	2.7	1.7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.3	0.92	0.53

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Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.7	1.8	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	1.1	0.75
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.56	0.32	0.19
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.5	1.2	0.8

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

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* 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 *
2714771	SP3 - A	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.
2714772	SP3 - B	None Supplied	None Supplied	Brown clay and sand with gravel.
2714773	SP3 - C	None Supplied	None Supplied	Brown clay and sand with gravel and vegetation.

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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 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 dispersion 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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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 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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	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 Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Analytical Report Number : 23-39415

Project / Site name: Jarrow Stockpile Assessment

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
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Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

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Analytical Report Number : 23-39447

Project / Site name: Jarrow Stockpile Assessment

Samples received on: 14/06/2023

Your job number: GCU0208012

**Samples instructed on/
Analysis started on:** 14/06/2023

Your order number: GCU 0208012

Analysis completed by: 27/06/2023

Report Issue Number: 1

Report issued on: 27/06/2023

Samples Analysed: 1 bulk sample - 9 soil samples

Signed:

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 23-39447
Project / Site name: Jarrow Stockpile Assessment
Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
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	9.7	15	13	13	16
Total mass of sample received	kg	0.001	NONE	1.8	1.8	1.8	1.8	1.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.018	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.018	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.5	8.2	8.4	8.1	8.3
Total Sulphate as SO ₄	%	0.005	MCERTS	0.318	0.256	0.344	0.163	0.108
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.2	2.7	2.4	3	2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.16	0.21	0.15	0.1	0.11
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	0.1	0.08	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.13	0.12	0.08	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.12	0.17	0.15	0.09	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.4	1.7	1.5	0.86	0.63
Anthracene	mg/kg	0.05	MCERTS	0.32	0.45	0.39	0.18	0.16
Fluoranthene	mg/kg	0.05	MCERTS	3	3.5	3.3	1.6	1.5
Pyrene	mg/kg	0.05	MCERTS	2.6	2.9	2.7	1.3	1.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.7	1.9	1.6	0.93	0.79
Chrysene	mg/kg	0.05	MCERTS	1.3	1.9	1.5	0.74	0.82
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.7	2.2	1.9	1.1	1.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.67	1.1	0.79	0.38	0.38
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.2	1.7	1.3	0.75	0.73
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.74	1.2	0.85	0.5	0.51
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.17	0.29	0.2	0.12	0.13
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.76	1.3	0.9	0.49	0.53

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	16	20.7	17.5	9.21	8.58
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	26	31	26	39	23
Barium (aqua regia extractable)	mg/kg	1	MCERTS	290	310	270	320	230
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5	1.6	1.4	1.8	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	2.5	3.9	1.5	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	69	52	43	57	49
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100	120	100	280	110
Lead (aqua regia extractable)	mg/kg	1	MCERTS	240	390	330	340	210
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.2	< 0.3	0.8	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	47	46	41	52	41
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	120	98	110	140	110
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	320	380	370	400	240

Analytical Report Number: 23-39447
 Project / Site name: Jarrow Stockpile Assessment
 Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
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	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	2.2	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	8.1	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	36	73	20	16	23
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	< 10	14	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	17	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	77	100	32	19	31

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

VOCs^

Chloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dibromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.16	0.21	0.15	0.1	0.11
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	0.2	0.2	0.1	0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	0.1	0.08	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.13	0.12	0.08	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.12	0.17	0.15	0.09	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.4	1.7	1.5	0.86	0.63
Anthracene	mg/kg	0.05	MCERTS	0.32	0.45	0.39	0.18	0.16
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	3	3.5	3.3	1.6	1.5
Pyrene	mg/kg	0.05	MCERTS	2.6	2.9	2.7	1.3	1.3
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.7	1.9	1.6	0.93	0.79
Chrysene	mg/kg	0.05	MCERTS	1.3	1.9	1.5	0.74	0.82
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.7	2.2	1.9	1.1	1.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.67	1.1	0.79	0.38	0.38

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Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714949	2714950	2714951	2714952	2714953
Sample Reference				SP2-A	SP2-B	SP2-C	SP5-A	SP5-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.2	1.7	1.3	0.75	0.73
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.74	1.2	0.85	0.5	0.51
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.17	0.29	0.2	0.12	0.13
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.76	1.3	0.9	0.49	0.53

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

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				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	12	10	16	12
Total mass of sample received	kg	0.001	NONE	1.8	1.8	1.8	1.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	9.7	7.9	9.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.225	0.23	0.299	0.315
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3	2.8	2.1	2.3

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.13	0.28	0.08	0.28
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	0.32	< 0.05	0.56
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.17	< 0.05	1.3
Fluorene	mg/kg	0.05	MCERTS	0.09	0.4	0.07	1.6
Phenanthrene	mg/kg	0.05	MCERTS	1.6	3	0.63	12
Anthracene	mg/kg	0.05	MCERTS	0.57	0.96	0.16	3.4
Fluoranthene	mg/kg	0.05	MCERTS	4	6.7	1.3	16
Pyrene	mg/kg	0.05	MCERTS	3.2	5.8	1.2	13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.1	3.9	1.1	9.5
Chrysene	mg/kg	0.05	MCERTS	1.8	3.7	1	6.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.2	4.8	1.4	8.5
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.9	1.5	0.68	3.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.4	3.3	1.4	6.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.91	2	0.87	4.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.21	0.59	0.21	1.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1	2.1	0.9	4.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	20.3	39.5	11	93.2
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	34	23	14	22
Barium (aqua regia extractable)	mg/kg	1	MCERTS	400	410	190	360
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.2	2.3	1.3	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.4	1.7	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	1
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	50	34	26	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	200	94	49	79
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	210	87	220
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3	3.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	46	34	32	38
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	99	63	44	67
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	380	270	94	260

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 Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Monoaromatics & Oxygenates^

Benzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	29	150	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	< 10	72	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	16
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	32	< 10	23
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	22	< 10	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	36	280	15	40

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Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
VOCs[^]							
Chloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Bromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Dibromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
2-Chlorotoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
	Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
	1,2-Dibromo-3-chloropropane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
	1,2,4-Trichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
	Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
	1,2,3-Trichlorobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39447

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Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs							
Aniline	mg/kg	0.1	NONE	1.1	3.4	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	0.6	< 0.2	1.1
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.13	0.28	0.08	0.28
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	0.3	0.2	0.5
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.6
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	0.32	< 0.05	0.56
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.17	< 0.05	1.3
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	0.2	< 0.2	1.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.09	0.4	0.07	1.6
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.6	3	0.63	12
Anthracene	mg/kg	0.05	MCERTS	0.57	0.96	0.16	3.4
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.1
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	1
Fluoranthene	mg/kg	0.05	MCERTS	4	6.7	1.3	16
Pyrene	mg/kg	0.05	MCERTS	3.2	5.8	1.2	13
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.1	3.9	1.1	9.5
Chrysene	mg/kg	0.05	MCERTS	1.8	3.7	1	6.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.2	4.8	1.4	8.5
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.9	1.5	0.68	3.7

Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714954	2714955	2714956	2714957
Sample Reference				SP5-C	SP4-A	SP4-B	SP4-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.4	3.3	1.4	6.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.91	2	0.87	4.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.21	0.59	0.21	1.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1	2.1	0.9	4.2

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

Analytical Report Number: 23-39447
Project / Site name: Jarrow Stockpile Assessment
Your Order No: GCU 0208012

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2714949	SP2-A		124	Loose Fibres	Chrysotile	0.018	0.018
2714954	SP5-C		115	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



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Analytical Report Number: 23-39447

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU 0208012

Lab Sample Number				2714958
Sample Reference				SP4-ASB
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				13/06/2023
Time Taken				None Supplied
Analytical Parameter (Bulk Analysis)	Units	Limit of detection	Accreditation Status	

Asbestos Identification	Type	N/A	ISO 17025	No Asbestos Detected
Asbestos Analyst ID	N/A	N/A	N/A	ASE

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

Analytical Report Number : 23-39447
Project / Site name: Jarrow Stockpile Assessment

* 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 *
2714949	SP2-A	None Supplied	None Supplied	Brown clay and sand with gravel.
2714950	SP2-B	None Supplied	None Supplied	Brown clay and sand with gravel.
2714951	SP2-C	None Supplied	None Supplied	Brown clay and sand with gravel.
2714952	SP5-A	None Supplied	None Supplied	Brown clay and sand with gravel.
2714953	SP5-B	None Supplied	None Supplied	Brown clay and sand with gravel.
2714954	SP5-C	None Supplied	None Supplied	Brown clay and sand with gravel.
2714955	SP4-A	None Supplied	None Supplied	Brown clay and sand with gravel.
2714956	SP4-B	None Supplied	None Supplied	Brown clay and sand with gravel.
2714957	SP4-C	None Supplied	None Supplied	Brown clay and loam with gravel.

Analytical Report Number : 23-39447

Project / Site name: Jarrow Stockpile Assessment

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 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 Bults	Asbestos Identification in bulk material with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	W	ISO 17025
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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 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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	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
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025

Analytical Report Number : 23-39447

Project / Site name: Jarrow Stockpile Assessment

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

[^] Data reported unaccredited due to quality control parameter failure associated with this result; The result should be considered as being deviating and may be compromised.

**Rhian Lynes**

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Analytical Report Number : 23-39667

Project / Site name:	Jarrow Stockpile Assessment	Samples received on:	15/06/2023
Your job number:	GCU0208012	Samples instructed on/ Analysis started on:	15/06/2023
Your order number:	GCU0208012	Analysis completed by:	28/06/2023
Report Issue Number:	1	Report issued on:	28/06/2023
Samples Analysed:	3 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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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.

Analytical Report Number: 23-39667
Project / Site name: Jarrow Stockpile Assessment
Your Order No: GCU0208012

Lab Sample Number				2716212	2716213	2716214
Sample Reference				SP8	SP8	SP8
Sample Number				A	B	C
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content				%	0.1	NONE
Moisture Content				%	0.01	NONE
Total mass of sample received				kg	0.001	NONE
					0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.003
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.003
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	SSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.8	9.2	8.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.409	0.221	0.203
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.1	2.2	2.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.19	0.19	0.15
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	0.25	0.12
Acenaphthene	mg/kg	0.05	MCERTS	0.14	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.21	0.11	0.12
Phenanthrene	mg/kg	0.05	MCERTS	1.4	1.1	1.1
Anthracene	mg/kg	0.05	MCERTS	0.41	0.29	0.32
Fluoranthene	mg/kg	0.05	MCERTS	2.7	2.8	2
Pyrene	mg/kg	0.05	MCERTS	2.2	2.4	1.7
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.4	1.7	1.1
Chrysene	mg/kg	0.05	MCERTS	1.1	1.5	0.96
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.9	2.4	1.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.6	0.77	0.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.2	1.6	0.84
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.77	1.1	0.63
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.26	0.36	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.81	1.2	0.61

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	15.4	17.7	11.5
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	27	31	32
Barium (aqua regia extractable)	mg/kg	1	MCERTS	310	310	290
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.9	1.7	1.6
Boron (water soluble)	mg/kg	0.2	MCERTS	2.4	1.5	1.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	77	42	64
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	140	150
Lead (aqua regia extractable)	mg/kg	1	MCERTS	300	310	360
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	40	40	48
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	140	81	140
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	310	370	350

Analytical Report Number: 23-39667
 Project / Site name: Jarrow Stockpile Assessment
 Your Order No: GCU0208012

Lab Sample Number				2716212	2716213	2716214
Sample Reference				SP8	SP8	SP8
Sample Number				A	B	C
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0##
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0##
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	1.6
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	4
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	9.2	< 8.0	8
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	84	83	55
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	33	22	18

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	36	31	28
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	11	< 10	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	180	160	130

Analytical Report Number: 23-39667
 Project / Site name: Jarrow Stockpile Assessment
 Your Order No: GCU0208012

Lab Sample Number	2716212	2716213	2716214
Sample Reference	SP8	SP8	SP8
Sample Number	A	B	C
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	14/06/2023	14/06/2023	14/06/2023
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0##
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0##
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0##
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0##
Trichloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0##
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0##
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0##
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0##
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0#	< 5.0#	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0#	< 5.0#	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0##	< 5.0##	< 5.0##
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39667
 Project / Site name: Jarrow Stockpile Assessment
 Your Order No: GCU0208012

Lab Sample Number				2716212	2716213	2716214
Sample Reference				SP8	SP8	SP8
Sample Number				A	B	C
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	5	3.3	3.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.19	0.19	0.15
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	0.2	0.2
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	0.25	0.12
Acenaphthene	mg/kg	0.05	MCERTS	0.14	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.21	0.11	0.12
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.4	1.1	1.1
Anthracene	mg/kg	0.05	MCERTS	0.41	0.29	0.32
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	2.7	2.8	2

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 Project / Site name: Jarrow Stockpile Assessment
 Your Order No: GCU0208012

Lab Sample Number				2716212	2716213	2716214
Sample Reference				SP8	SP8	SP8
Sample Number				A	B	C
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Pyrene	mg/kg	0.05	MCERTS	2.2	2.4	1.7
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.4	1.7	1.1
Chrysene	mg/kg	0.05	MCERTS	1.1	1.5	0.96
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.9	2.4	1.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.6	0.77	0.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.2	1.6	0.84
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.77	1.1	0.63
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.26	0.36	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.81	1.2	0.61

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



Analytical Report Number: 0
Project / Site name: 0
Your Order No: 0

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
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Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 23-39667

Project / Site name: Jarrow Stockpile Assessment

* 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 *
2716212	SP8	A	None Supplied	Brown loam and clay with gravel.
2716213	SP8	B	None Supplied	Brown loam and clay with gravel and vegetation.
2716214	SP8	C	None Supplied	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 23-39667

Project / Site name: Jarrow Stockpile Assessment

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 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 dispersion 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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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 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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	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
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025

Analytical Report Number : 23-39667

Project / Site name: Jarrow Stockpile Assessment

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

- Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

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Analytical Report Number : 23-39668

Project / Site name: Jarrow Stockpile Assessment

Samples received on: 15/06/2023

Your job number: GCU0208012

**Samples instructed on/
Analysis started on:** 15/06/2023

Your order number: GCU0208012

Analysis completed by: 23/06/2023

Report Issue Number: 1

Report issued on: 23/06/2023

Samples Analysed: 3 soil samples

Signed:

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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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.

Analytical Report Number: 23-39668

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
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	11	11	13
Total mass of sample received	kg	0.001	NONE	1.3	0.8	0.8

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9	8.8	8.8
Total Sulphate as SO ₄	%	0.005	MCERTS	0.186	0.119	0.145
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	2.2	2.2

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.14	0.15	1.6
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	< 0.05	0.21
Acenaphthene	mg/kg	0.05	MCERTS	0.09	< 0.05	1.7
Fluorene	mg/kg	0.05	MCERTS	0.12	0.1	2.4
Phenanthrene	mg/kg	0.05	MCERTS	1.3	1.4	14
Anthracene	mg/kg	0.05	MCERTS	0.37	0.28	4.1
Fluoranthene	mg/kg	0.05	MCERTS	2.4	2.6	14
Pyrene	mg/kg	0.05	MCERTS	2	2.2	11
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.4	1.4	6.9
Chrysene	mg/kg	0.05	MCERTS	1.2	1.3	5.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.7	1.7	6.7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.6	0.59	2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1	1.1	4.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.77	0.7	2.4
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.24	0.23	0.86
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.76	0.71	2.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	14	14.3	79
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	30	31	27
Barium (aqua regia extractable)	mg/kg	1	MCERTS	300	260	270
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.9	1.6	1.7
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.7	1.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	63	48	45
Copper (aqua regia extractable)	mg/kg	1	MCERTS	140	140	120
Lead (aqua regia extractable)	mg/kg	1	MCERTS	300	320	300
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	43	42	43
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	160	100	86
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	330	330	380

Analytical Report Number: 23-39668

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Monoaromatics & Oxygenates

Benzene# #	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene# #	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	3.2
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	23
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	70	63	130
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	27	20	39

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	1.2
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	5.7	< 2.0	9.1
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	14	13	53
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	43	42	130
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	< 10	< 10	25
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	170	160	410

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Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Bromomethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethene##	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Cis-1,2-dichloroethene##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
2,2-Dichloropropane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trichloromethane##	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Benzene##	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Toluene##	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
2-Chlorotoluene##	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39668

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0

Analytical Report Number: 23-39668

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

SVOCs

Aniline	mg/kg	0.1	NONE	5.6	3.8	4.8
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.14	0.15	1.6
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	0.2	1.6
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	< 0.05	0.21
Acenaphthene	mg/kg	0.05	MCERTS	0.09	< 0.05	1.7
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.6
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.12	0.1	2.4
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.3	1.4	14
Anthracene	mg/kg	0.05	MCERTS	0.37	0.28	4.1
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	1.1
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	2.4	2.6	14
Pyrene	mg/kg	0.05	MCERTS	2	2.2	11
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.4	1.4	6.9
Chrysene	mg/kg	0.05	MCERTS	1.2	1.3	5.5
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.7	1.7	6.7
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.6	0.59	2

Analytical Report Number: 23-39668

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716215	2716216	2716217
Sample Reference				SP14-A	SP14-B	SP14-C
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				15/06/2023	15/06/2023	15/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1	1.1	4.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.77	0.7	2.4
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.24	0.23	0.86
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.76	0.71	2.4

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

Analytical Report Number : 23-39668

Project / Site name: Jarrow Stockpile Assessment

* 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 *
2716215	SP14-A	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation.
2716216	SP14-B	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation.
2716217	SP14-C	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 23-39668

Project / Site name: Jarrow Stockpile Assessment

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 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 dispersion 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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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 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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	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 : 23-39668

Project / Site name: Jarrow Stockpile Assessment

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

##Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Rhian Lynes

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Analytical Report Number : 23-39674

Project / Site name: Jarrow Stockpile Assessment

Samples received on: 15/06/2023

Your job number: GCU0208012

**Samples instructed on/
Analysis started on:** 15/06/2023

Your order number: GCU0208012

Analysis completed by: 29/06/2023

Report Issue Number: 1

Report issued on: 29/06/2023

Samples Analysed: 9 soil samples

Signed

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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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.

Analytical Report Number: 23-39674
Project / Site name: Jarrow Stockpile Assessment
Your Order No: GCU0208012

Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
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	42	39	< 0.1	53	< 0.1
Moisture Content	%	0.01	NONE	11	11	13	13	13
Total mass of sample received	kg	0.001	NONE	1.5	1.3	1.3	1.3	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.7	9.3	9.1	10.7	9.7
Total Sulphate as SO ₄	%	0.005	MCERTS	0.495	0.719	0.439	0.272	0.166
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.5	0.6	0.7	0.6	0.6

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.29	0.31	0.37	0.2	0.55
Anthracene	mg/kg	0.05	MCERTS	0.11	0.08	0.1	< 0.05	0.15
Fluoranthene	mg/kg	0.05	MCERTS	0.72	0.73	0.89	0.38	1.2
Pyrene	mg/kg	0.05	MCERTS	0.65	0.72	0.91	0.34	0.98
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.54	0.64	0.72	0.24	0.75
Chrysene	mg/kg	0.05	MCERTS	0.49	0.52	0.62	0.24	0.73
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.65	0.81	0.94	0.34	0.86
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.29	0.31	0.38	0.12	0.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.54	0.66	0.81	0.26	0.71
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	0.39	0.48	0.2	0.44
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.1	0.1	< 0.05	0.12
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.35	0.43	0.54	0.24	0.52

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	4.95	5.7	6.86	2.56	7.36
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	5.9	7	7.1	8.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	250	240	250	200	280
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.67	0.7	0.61	0.57	0.51
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	1.4	2.9	0.8	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	1.8	0.2	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	17	19	17	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	18	24	21	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	110	190	73	410
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	0.4	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	12	14	12	14
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	29	22	26	32	24
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	130	180	99	140

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Project / Site name: Jarrow Stockpile Assessment

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Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
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	5	MCERTS	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Ethylbenzene	µg/kg	5	MCERTS	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
o-xylene	µg/kg	5	MCERTS	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	8.7	2.2	< 2.0	< 2.0	4.9
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	27	17	9.2	< 8.0	36
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	86	63	69	< 8.0	43
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	29	25	25	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	7.2	< 2.0	< 2.0	3.1	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	27	< 10	< 10	< 10	14
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	89	63	79	13	41
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	26	26	32	< 10	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	300	200	220	26	150

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Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0	< 5.0	< 5.0^	< 5.0^
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Trichloromethane	µg/kg	5	NONE	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
Ethylbenzene	µg/kg	5	MCERTS	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Styrene	µg/kg	5	ISO 17025	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
o-Xylene	µg/kg	5	MCERTS	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0##	< 5.0	< 5.0	< 5.0^	< 5.0^
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
Bromobenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0##	< 5.0##	< 5.0^	< 5.0^
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0#	< 5.0	< 5.0	< 5.0^	< 5.0^
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^

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Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0##	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0^	< 5.0^

Analytical Report Number: 23-39674

Project / Site name: Jarrow Stockpile Assessment

Your Order No: GCU0208012

Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	0.29	0.31	0.37	0.2	0.55
Anthracene	mg/kg	0.05	MCERTS	0.11	0.08	0.1	< 0.05	0.15
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	0.72	0.73	0.89	0.38	1.2
Pyrene	mg/kg	0.05	MCERTS	0.65	0.72	0.91	0.34	0.98
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.54	0.64	0.72	0.24	0.75
Chrysene	mg/kg	0.05	MCERTS	0.49	0.52	0.62	0.24	0.73
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.65	0.81	0.94	0.34	0.86
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.29	0.31	0.38	0.12	0.4

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Lab Sample Number				2716406	2716407	2716408	2716409	2716410
Sample Reference				SP6-A	SP6-B	SP6-C	SP11-A	SP11-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.54	0.66	0.81	0.26	0.71
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	0.39	0.48	0.2	0.44
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.1	0.1	< 0.05	0.12
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.35	0.43	0.54	0.24	0.52

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

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	50	24	16	48
Moisture Content	%	0.01	NONE	11	11	13	11
Total mass of sample received	kg	0.001	NONE	0.8	1.3	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	Chrysotile	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.284	< 0.001	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.284	< 0.001	< 0.001	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	SPU	SPU

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.9	9	9.2	10.2
Total Sulphate as SO4	%	0.005	MCERTS	0.497	0.239	0.308	0.497
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.6	1.4	1	0.9

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.3	0.73	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.08	0.18	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.65	1.8	0.49	0.27
Anthracene	mg/kg	0.05	MCERTS	0.19	0.84	0.08	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.1	6.6	0.84	0.48
Pyrene	mg/kg	0.05	MCERTS	0.92	5.8	0.73	0.44
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.62	4.6	0.46	0.29
Chrysene	mg/kg	0.05	MCERTS	0.48	3.9	0.45	0.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.62	5.1	0.62	0.37
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.28	2.5	0.19	0.18
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.5	4.2	0.38	0.25
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	2.4	0.27	0.19
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	0.08	0.68	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.33	2.6	0.3	0.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	6.17	42.5	5.54	2.97
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.2	8.2	8.3	9.5
Barium (aqua regia extractable)	mg/kg	1	MCERTS	270	220	260	250
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.72	0.74	0.73	0.98
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	2.3	3.5	2.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.9	0.5	0.6	0.6
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	46	23	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	50	59	48
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	210	390	300
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	62	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	74	29	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	28	26	32
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	340	330	280

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0#	< 5.0#
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	5.1	< 2.0	5.8	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	16	< 8.0	52	8.2
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	58	79	130	37
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_1D_AL}	mg/kg	10	NONE	12	22	24	10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	4.3	< 2.0	6.1	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	17	21	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	34	85	63	23
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_1D_AR}	mg/kg	10	NONE	13	26	21	< 10
TPH Total C5 - C40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	150	240	320	93

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
VOCs							
Chloromethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0##	< 5.0##
Vinyl Chloride	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Trichloromethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0##	< 5.0##
Trichloroethene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0#	< 5.0#
Tribromomethane	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0^	< 5.0^	< 5.0#	< 5.0#
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0##	< 5.0##
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0#	< 5.0#
Bromobenzene	µg/kg	5	NONE	< 5.0^	< 5.0^	< 5.0	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0#	< 5.0#
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0##	< 5.0##
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0^	< 5.0^	< 5.0	< 5.0

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Butylbenzene	µg/kg	5	NONE	< 5.0 [^]	< 5.0 [^]	< 5.0	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0 [^]	< 5.0 [^]	< 5.0	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0 [^]	< 5.0 [^]	< 5.0	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0 [^]	< 5.0 [^]	< 5.0	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0 [^]	< 5.0 [^]	< 5.0 [#]	< 5.0 [#]

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.3	0.73	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	0.4	0.3	1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	0.08	0.18	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	0.65	1.8	0.49	0.27
Anthracene	mg/kg	0.05	MCERTS	0.19	0.84	0.08	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	1.1	6.6	0.84	0.48
Pyrene	mg/kg	0.05	MCERTS	0.92	5.8	0.73	0.44
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	0.9	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.62	4.6	0.46	0.29
Chrysene	mg/kg	0.05	MCERTS	0.48	3.9	0.45	0.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.62	5.1	0.62	0.37
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.28	2.5	0.19	0.18

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Lab Sample Number				2716411	2716412	2716413	2716414
Sample Reference				SP11-C	SP13-A	SP13-B	SP13-C
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				14/06/2023	14/06/2023	14/06/2023	14/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.5	4.2	0.38	0.25
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	2.4	0.27	0.19
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.08	0.68	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.33	2.6	0.3	0.2

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

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Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2716410	SP11-B		135	Loose Fibres	Chrysotile	< 0.001	< 0.001
2716411	SP11-C		158	Asbestos Cement	Chrysotile	0.284	0.284
2716412	SP13-A		172	Loose Fibres	Chrysotile	< 0.001	< 0.001
2716413	SP13-B		133	Loose Fibres	Chrysotile	< 0.001	< 0.001
2716414	SP13-C		150	Loose Fibres	Chrysotile & Amosite	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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* 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 *
2716406	SP6-A	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716407	SP6-B	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716408	SP6-C	None Supplied	None Supplied	Brown loam and sand with gravel.
2716409	SP11-A	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716410	SP11-B	None Supplied	None Supplied	Brown loam and sand with gravel.
2716411	SP11-C	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716412	SP13-A	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716413	SP13-B	None Supplied	None Supplied	Brown loam and sand with gravel and stones.
2716414	SP13-C	None Supplied	None Supplied	Brown loam and sand with gravel and stones.

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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 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 dispersion 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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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 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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	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
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025

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Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

#Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and therefore may be compromised.

##Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

^ Data reported unaccredited due to quality control parameter failure associated with this result; The result should be considered as being deviating and may be compromised.