



Client:

DQ Developments Ltd
1st Floor, NQ Building
47 Bengal Street
Ancoats
Manchester
M4 6BB

Consultant/Engineer:

Renaker Build Limited
1st Floor, NQ Building
47 Bengal Street
Ancoats
Manchester
M4 6BB

Validation Information Tower C2

Crown Street - Zone 1, Silvercroft Street, Manchester

Jan 2022

Site Ref: 5890/CRK Validation
Info Tower C2

Unit 4
Sheffield Street
Heaton Norris
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Validation Informaion Tower C2

This report presents the validation information for the imported soils to the raised planters and limited ground planting in the public open spaces surrounding Tower C2 on the Crown Street - Zone 1, Silvercroft Street, Manchester Development as required by planning consent. Plans depicting sampling locations and Photographs of the development are appended to this report along with supplier declared certification for the imported soils and analytical testing of the soils as imported sampled and tested. Verification evidence for the bulk earthworks and site strip was provided in report ref 5890/CRK VRTD titled Crown Street - Zone 1, Silvercroft Street, Manchester, Sitewide Earthworks & Building C1 Soils Verification Report

Background Information

The soils were cleared for import based on the supplier declared certification. Soils as imported were then sampled and tested. The Soils as imported were found to conform with the generic assessment criteria for residential land use from a human health perspective.

General Site Works

The developer and all contractors employed by the developer were required to monitor for, and report any evidence of contamination found during construction/placement. None was encountered or reported.

Concluding Statement

The evidence presented demonstrate that all reasonably practicable steps have been taken to ensure the risk to occupiers from soils contamination within soft landscaped areas across the area of building C2 is very low in all reasonably foreseeable circumstances.

Matthew Benson MSc GMICE

Geotechnical & Environmental Engineer

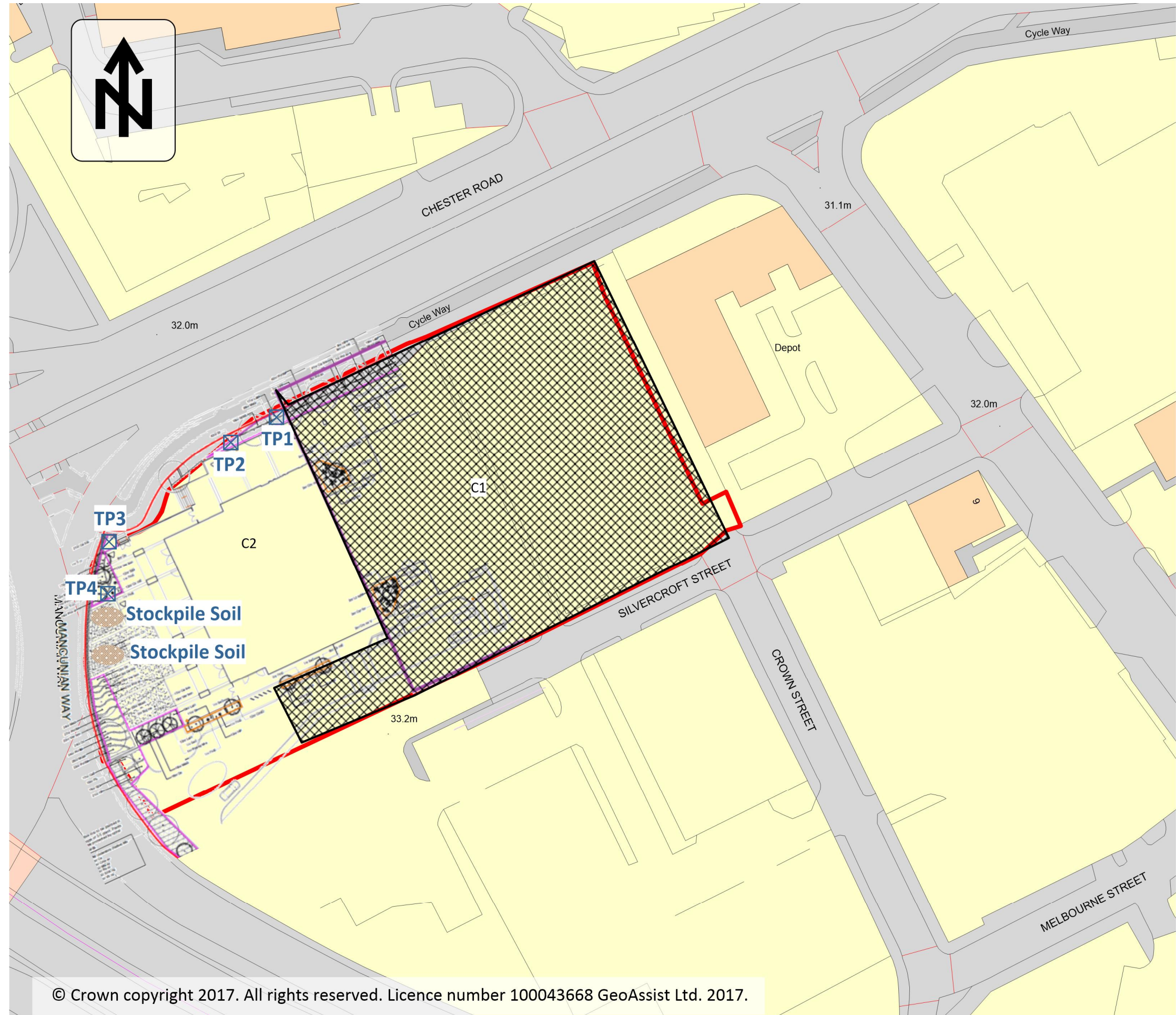
Mark Richardson MSc CEng MICE

Technical Director

This report has been prepared by GeoAssist Limited with all reasonable professional skill, care and diligence within the terms of the contract with DQ Developments Ltd. The report is confidential to DQ Developments Ltd, their/the named persons advisors and bankers, and GeoAssist Limited accepts no responsibility of whatever nature to third parties to whom this review may be divulged. GeoAssist Limited owns the copyright in this review. All rights are reserved, and unauthorised use is prohibited. DQ Developments Ltd may use the review for their/her/his own purposes.

Appendix A

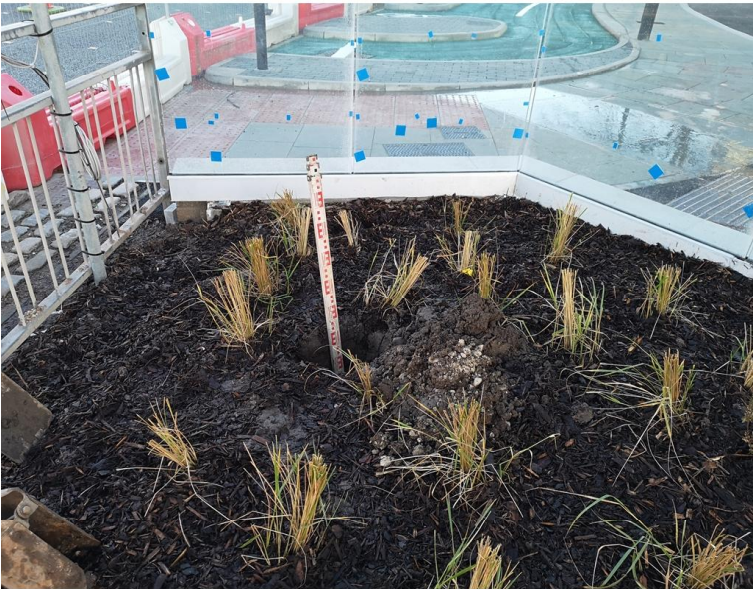
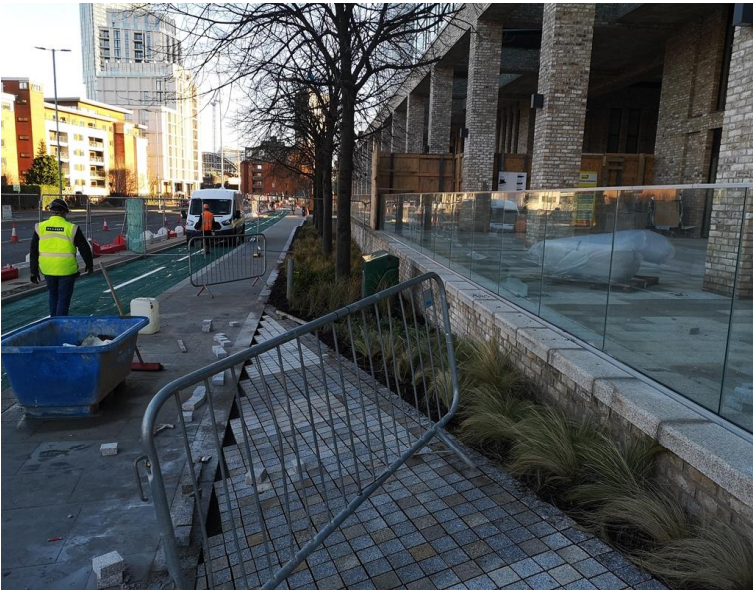
A1 Sample Location Plan



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A1 Site Plan

Site Name	Crown Street - Zone 1
Location	Silvercroft Street, Manchester
GeoAssist Ref	5890CRK
Client	DQ Developments Ltd
	1st Floor, NQ Building 47 Bengal Street Ancoats Manchester M4 6BB
Planning Consultant	Renaker Build Limited
NGR (centre of site)	383130,397300
Production Date	Jan 2022
Survey Method	
Surveyor	Others
Status	Final v1.00
Base Survey	OSGB36



Area of TP1 & TP1	TP1	TP2
TP3	TP4	Area TP4 & TP1
Soil Stock Pile		

A1 Site Photographs

Site Name	Crown Street - Zone 1
Location	Silvercroft Street, Manchester
GeoAssist Ref	5890CRK
Client	DQ Developments Ltd
	1st Floor, NQ Building 47 Bengal Street Ancoats Manchester M4 6BB
Planning Consultant	Renaker Build Limited
NGR (centre of site)	383130,397300
Production Date	Jan 2022
Survey Method	
Surveyor	Others
Status	Final v1.00
Base Survey	OSGB36

Appendix B

- B1 Supplier Declared Soil Analysis Certificate**
- B2 As Delivered and Sampled Risk Assessment**



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e: MURRAYRIX Group

Analytical Report Number : 21-22397

Replaces Analytical Report Number: 21-22397, issue no. 1
Additional analysis undertaken.

Project / Site name:	Henbury, Mcclesfield	Samples received on:	11/11/2021
Your job number:		Samples instructed on/ Analysis started on:	11/11/2021
Your order number:	21-355	Analysis completed by:	19/11/2021
Report Issue Number:	2	Report issued on:	19/11/2021
Samples Analysed:	3 soil samples		

Signed: Karolina Marek

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

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

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

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

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

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

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

Analytical Report Number: 21-22397
Project / Site name: Henbury, Mcclesfield
Your Order No: 21-355

Lab Sample Number				2080053	2080054	2080055
Sample Reference				106444	106445	106446
Sample Number				TS/ADM/01	TS/ADM/02	TS/ADM/03
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				10/11/2021	10/11/2021	10/11/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	19	24
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0

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

pH - Automated	pH Units	N/A	MCERTS	7.2	7.0	6.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0048	0.016	0.0085
Organic Matter (automated)	%	0.1	MCERTS	6.7	5.4	5.7
Total Organic Carbon (TOC)	%	0.1	MCERTS	3.9	3.1	3.3

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.33	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.28	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.21	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.21	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.29	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.15	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.23	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1.70	< 0.80	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.8	6.7	11
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.39	0.43	0.61
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.4	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	15	32	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	32	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	22	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	33	52
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.6	10	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	27	57	32
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	59	71	76

Analytical Report Number: 21-22397
Project / Site name: Henbury, Mcclesfield
Your Order No: 21-355

Lab Sample Number				2080053	2080054	2080055
Sample Reference				106444	106445	106446
Sample Number				TS/ADM/01	TS/ADM/02	TS/ADM/03
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				10/11/2021	10/11/2021	10/11/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Monoaromatics & Oxygenates

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

Petroleum Hydrocarbons

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

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

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



Analytical Report Number : 21-22397

Project / Site name: Henbury, Mcclesfield

* 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 *
2080053	106444	TS/ADM/01	None Supplied	Brown loam and clay with gravel and vegetation.
2080054	106445	TS/ADM/02	None Supplied	Brown loam and clay with vegetation.
2080055	106446	TS/ADM/03	None Supplied	Brown loam and clay with vegetation.

Analytical Report Number : 21-22397
Project / Site name: Henbury, Mcclesfield

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

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



Analytical Report Number : 21-22397
Project / Site name: Henbury, Mcclesfield

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

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

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

Soils Risk Assessment

Site Reference: 5890 CRK
 Project Site: Crown Street - Zone 1
 Project Location: Silvercroft Street, Manchester
 Client: DQ Developments Ltd

i2 Reference	Residential	TP1-C1	TP2-C1	TP3-C1	TP4-C1	STP-C1	STP-C2
Customer Sample Ref:	C4SL / S4UL	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
	SOM 1% GAC	0.20	0.20	0.20	0.20	Stockpile	Stockpile
Determinand	LQM II						
Arsenic	40	17	13	16	20	9.3	11
Boron (water-soluble)	11000	0.9	0.6	0.9	0.4	0.7	1
Cadmium	150	0.2	0.2	0.2	0.2	0.2	0.2
Chromium*	910	13	12	13	16	12	13
Chromium VI	21	1.2	1.2	1.2	1.2	4.2	1.2
Copper	7100	79	50	55	57	37	49
Cyanide(Total)	-	1	1	1	1	1	1
Cyanide(free)**	34	1	1	1	1	1	1
Lead	310	97	85	170	130	67	88
Mercury	1.2	0.3	0.3	0.4	0.3	0.3	0.4
Nickel	180	13	13	15	13	11	13
pH	-	8	8	8.1	8	8	8.6
Phenols(Mono)	2300	1	1	1	1	1	1
Selenium	430	1	1	1	1	1	1
SO4(Total)	-	0.151	0.1	0.11	0.104	0.1	0.105
Sulphide	-	16	19	16	18	20	13
Sulphur(Free)	-	0.068	0.067	0.058	0.06	0.045	0.056
Thiocyanate	-	5	5	5	5	5	5
Zinc	4000	120	130	120	110	92	110
Acenaphthene	6000	0.23	0.24	0.61	0.2	0.34	0.05
Acenaphthylene	6000	0.05	0.05	0.05	0.05	0.05	0.05
Anthracene	37000	0.63	0.51	1.7	0.68	1.1	0.45
Benzo(a)Anthracene	-	2.8	2.2	4.5	2.1	3	2.1
Benzo(a)Pyrene SM	5.3	2.7	2.5	4.5	2.4	3	2.2
Benzo(b)Fluoranthene	-	3.2	2.9	5.2	2.5	3.7	2.5
Benzo(ghi)Perylene	-	1.5	1.4	2.5	1.2	1.8	1.1
Benzo(k)Fluoranthene	-	0.9	0.99	1.6	1.1	1	0.69
Chrysene	-	1.7	2.1	3.9	2	2.5	1.4
Dibenzo(ah)Anthracene	-	0.33	0.29	0.54	0.24	0.4	0.25
Fluoranthene	1600	4.9	4.3	11	4.5	6.5	3.7
Fluorene	4500	0.26	0.21	0.49	0.21	0.34	0.05
Indeno(123-cd)Pyrene	-	1.2	1.3	2	1.1	1.5	1
Naphthalene	13	0.05	0.29	0.05	0.05	0.05	0.05
Phenanthrene	1500	2.3	2	5.9	2.4	4	1.8
Pyrene	3800	4.6	4.1	9.7	4.2	6.1	3.5
PAH(total)	500	27.2	25.3	53.7	24.8	35.3	20.8
Asbestos	N.D.	0	0	0	0	0	0

All Units mg/kg unless otherwise stated Indicates Exceedance of Applicable Level

*Criteria Assumes Chromium III

**Criteria is derived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

**Criteria is derived considering Total TPH (C10 to C35) is formed entirely of a 50:50 Aliphatic and Aromatic Split C8-C10 range

Basis of Assessment Criteria:	EA 2005 WAC (Human Health Value)	C4SL
SGV Soil Guideline Value EA	LQM S4UL	Atrisk 06



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Analytical Report Number : 21-29617

Project / Site name:	Crown Street, Building C2, Manchester	Samples received on:	16/12/2021
Your job number:	5890-CRK	Samples instructed on/ Analysis started on:	16/12/2021
Your order number:	2211217	Analysis completed by:	28/12/2021
Report Issue Number:	1	Report issued on:	28/12/2021
Samples Analysed:	6 soil samples		

Signed: *Karolina Marek*

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

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

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

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

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

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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: 21-29617

Project / Site name: Crown Street, Building C2, Manchester

Your Order No: 2211217

Lab Sample Number				2119317	2119318	2119319	2119320	2119321
Sample Reference				TP1-C1	TP2-C1	TP3-C1	TP4-C1	STP-C1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.20	0.20	Stockpile
Date Sampled				15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	%	0.01	NONE	16	15	15	13	15
	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.50

General Inorganics

pH Automated	pH Units	N/A	MCERTS	8.0	8.0	8.1	8.0	8.0
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.151	0.100	0.110	0.104	0.100
Sulphide	mg/kg	1	MCERTS	16	19	16	18	20
Total Sulphur	%	0.005	MCERTS	0.068	0.067	0.058	0.060	0.045

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.29	< 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	0.23	0.24	0.61	0.20	0.34
Fluorene	mg/kg	0.05	MCERTS	0.26	0.21	0.49	0.21	0.34
Phenanthrene	mg/kg	0.05	MCERTS	2.3	2.0	5.9	2.4	4.0
Anthracene	mg/kg	0.05	MCERTS	0.63	0.51	1.7	0.68	1.1
Fluoranthene	mg/kg	0.05	MCERTS	4.9	4.3	11	4.5	6.5
Pyrene	mg/kg	0.05	MCERTS	4.6	4.1	9.7	4.2	6.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.8	2.2	4.5	2.1	3.0
Chrysene	mg/kg	0.05	MCERTS	1.7	2.1	3.9	2.0	2.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.2	2.9	5.2	2.5	3.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.90	0.99	1.6	1.1	1.0
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.7	2.5	4.5	2.4	3.0
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.2	1.3	2.0	1.1	1.5
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.33	0.29	0.54	0.24	0.40
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	1.4	2.5	1.2	1.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	27.2	25.3	53.7	24.8	35.3
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Analytical Report Number: 21-29617
 Project / Site name: Crown Street, Building C2, Manchester
 Your Order No: 2211217

Lab Sample Number				2119317	2119318	2119319	2119320	2119321
Sample Reference				TP1-C1	TP2-C1	TP3-C1	TP4-C1	STP-C1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.20	0.20	0.20	Stockpile
Date Sampled				15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	13	16	20	9.3
Barium (aqua regia extractable)	mg/kg	1	MCERTS	150	140	200	210	100
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.54	0.56	0.63	0.60	0.54
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	0.6	0.9	0.4	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	4.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	12	13	16	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	79	50	55	57	37
Lead (aqua regia extractable)	mg/kg	1	MCERTS	97	85	170	130	67
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	< 0.3	0.4	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	13	15	13	11
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	17	17	20	17	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	130	120	110	92

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

Analytical Report Number: 21-29617

Project / Site name: Crown Street, Building C2, Manchester

Your Order No: 2211217

Lab Sample Number	2119322			
Sample Reference	STP-C2			
Sample Number	None Supplied			
Depth (m)	Stockpile			
Date Sampled	15/12/2021			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	16
Total mass of sample received	kg	0.001	NONE	0.50

General Inorganics

pH Automated	pH Units	N/A	MCERTS	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.105
Sulphide	mg/kg	1	MCERTS	13
Total Sulphur	%	0.005	MCERTS	0.056

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.8
Anthracene	mg/kg	0.05	MCERTS	0.45
Fluoranthene	mg/kg	0.05	MCERTS	3.7
Pyrene	mg/kg	0.05	MCERTS	3.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.1
Chrysene	mg/kg	0.05	MCERTS	1.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.5
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.69
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.0
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.25
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.1

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	20.8
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Analytical Report Number: 21-29617

Project / Site name: Crown Street, Building C2, Manchester

Your Order No: 2211217

Lab Sample Number		2119322		
Sample Reference		STP-C2		
Sample Number		None Supplied		
Depth (m)		Stockpile		
Date Sampled		15/12/2021		
Time Taken		None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.56
Boron (water soluble)	mg/kg	0.2	MCERTS	1.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	88
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	17
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110

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



Analytical Report Number : 21-29617

Project / Site name: Crown Street, Building C2, Manchester

* 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 *
2119317	TP1-C1	None Supplied	0.2	Brown clay and sand with gravel.
2119318	TP2-C1	None Supplied	0.2	Brown clay and sand with gravel.
2119319	TP3-C1	None Supplied	0.2	Brown clay and sand with gravel.
2119320	TP4-C1	None Supplied	0.2	Brown clay and sand with gravel and vegetation.
2119321	STP-C1	None Supplied	Stockpile	Brown clay and sand with gravel and vegetation.
2119322	STP-C2	None Supplied	Stockpile	Brown clay and sand with gravel and vegetation.

Analytical Report Number : 21-29617
Project / Site name: Crown Street, Building C2, Manchester

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
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 °C)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	In-house method	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
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
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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