

**Reference Number:** FOI202223/610  
**From:** Commercial  
**Date:** 24 February 2023  
**Subject:** Springfield Park Planning Documentation

Under environment regulations and FOI we are requesting;

Q1 Specification and monitoring detail for phase one return of Springfield Park plus

A1 Please see attached documents:

- [14-266-L1 AH Phase 1 Cover System Validation Report March 21](#)
- [191119 Planning Permission](#)
- [LCC\\_Re-instatement\\_Specification](#)

In regards to the specification, please refer to documents **191119 Planning Permission** and **LCC\_Re-instatement\_Specification** for a copy of the Liverpool City Council (LCC) specification that was appended to the land exchange agreement and the planning consent where condition 20c requires us to

*c) A detailed remediation scheme (if required), has been submitted to and agreed in writing with the LPA. This scheme shall include an appraisal of remedial options, implementation timetable, works schedule, site management objectives, monitoring proposals and remediation validation methodology. The scheme once completed must ensure that the site will not qualify as contaminated land under Part IIA of the Environmental Protection Act 1990 in relation to its intended use.*

In regards to the monitoring and proposal, the trust engaged E3P to test and validate the imported soils as required. Please refer to **14-266-L1 AH Phase 1 Cover System Validation Report March 21**

Q2 Method statement for drainage for phase one return of Springfield Park

A2 Information not held - the trust and its engineers are reviewing drainage requirements that are to be fully agreed with Liverpool City Council (LCC). Therefore, the final proposals for a method statement is not currently available for issue.



Validation Completion Report  
Alder Hey

Reference:14-266-R1-1  
Date: March 2021



## VALIDATION COMPLETION REPORT

Alder Hey Children's Hospital  
Alder Road  
Liverpool  
L12 2BA

Prepared for:  
**Alder Hey Children's Hospital**

**Report Ref: 14-266-R1-1**  
**Date Issued: March 2021**




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## QUALITY ASSURANCE

<b>PROJECT NUMBER</b>	14-266		
<b>VERSION</b>	Version 1		
<b>REMARKS</b>	Final		
<b>DATE</b>	3 March 2021		
<b>PREPARED BY</b>	E Fearn		
<b>QUALIFICATIONS</b>	BSc (Hons), MSc, FGS		
<b>SIGNATURE</b>			
<b>CHECKED BY</b>	S. Cox		
<b>QUALIFICATIONS</b>	BSc, FGS, AIEMA, MIEnvSc, CEnv		
<b>SIGNATURE</b>			
<b>AUTHORISED BY</b>	M Dyer		
<b>QUALIFICATIONS</b>	BSc, FGS, AIEMA, MIEnvSc, CEnv		
<b>SIGNATURE</b>			



Cert No 18890

ISO 9001 (2015)  
ISO 14001 (2015)  
ISO 45001 (2018)





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## 1. INTRODUCTION

### 1.1. BACKGROUND

E3P Ltd has been commissioned by Alder Hey Children's Hospital to produce a Completion Report in relation to the validation of the cover system placed on a new area of public park on a former hospital site as part of the Alder Hey Children's Hospital, named as Springfield Park, Phase 1.

Liverpool City Council confirmed their general acceptance of the remediation works and subsequent validation works for the proposed residential development, pending the following information:

- ✳ Validation of the 600mm cover system across the area.

All outstanding information is included within this report.

All acronyms used within this report are defined in the Glossary presented in Appendix II.

### 1.2. OBJECTIVES

E3P have been instructed to develop a detailed Validation Completion Report associated with the validation of the residential development that will incorporate the following:

- ✳ Overview of the validation works undertaken on the development site within the public park areas; and
- ✳ Chemical laboratory analysis undertaken of the imported material.

### 1.3. LIMITATIONS

The limitations of this report are presented in Appendix I.

### 1.4. CONFIDENTIALITY

E3P has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.



## 2. COVER SYSTEM VALIDATION

Independent validation of areas 1 to 13 was undertaken on Friday 19<sup>th</sup> February 2021. During the visit, the depth of the cover system was measured to confirm the installation of 450mm subsoil (imported) and 150mm topsoil (imported) with photographs taken by way of validation.

All material used for the cover system was confirmed chemically suitable for use through chemical analysis, discussed further in Section 3.0. All validation works have been completed in strict accordance with the specification previously agreed with Liverpool City Council, this included a geotextile break layer beneath the cover system at 600mm.

All cover system validation photos and the validation location plan are in Appendix III of this report.



### 3. CHEMICAL VALIDATION

#### 3.1. TOPSOIL AND SUBSOIL

All gardens and landscaped areas require a 600mm chemically suitable cover system comprising at least 450mm subsoil and 150mm topsoil.

Subsoil and topsoil materials were tested prior to use within the proposed cover system to confirm their chemical suitability for use within the public park development. The topsoil was sourced from R Drapers Ltd in Simonswood, Kirkby. The subsoil was sourced from CCC Waste Ltd on Stopgate Lane, Kirkby.

#### 3.2. CHEMICAL VALIDATION

Twenty-six subsoil samples were submitted for chemical analysis, the results confirmed that the material is suitable for use within the 600mm cover system within the public park development.

Table 3.1 provides a summary of subsoil samples undertaken for the site for a volume of 6,220 m<sup>3</sup>.

TABLE 3.1 SUMMARY OF SUBSOIL SAMPLES

Sample Ref	Date Sampled	Report No.	Suitable for Use
SS101	27/08/2021	20-27770-2	Yes
SS102	27/08/2021	20-27770-2	Yes
SS103	27/08/2021	20-27770-2	Yes
SS104	28/09/2021	20-32789-1	Yes
SS105	28/09/2021	20-32789-1	Yes
SS106	28/09/2021	20-32789-1	Yes
SS107	28/09/2021	20-32789-1	Yes
SS108	28/09/2021	20-32789-1	Yes
SS109	28/09/2021	20-32789-1	Yes
SS110	28/09/2021	20-32789-1	Yes
SS111	28/09/2021	20-32789-1	Yes
SS112	28/09/2021	20-32789-1	Yes
SS113	28/09/2021	20-32789-1	Yes
SS114	28/09/2021	20-32789-1	Yes
SS115	02/11/2021	20-39281-1	Yes
SS116	02/11/2021	20-39281-1	Yes
SS117	02/11/2021	20-39281-1	Yes
SS118	02/11/2021	20-39281-1	No
SS119	02/11/2021	20-39281-1	Yes
SS120	02/11/2021	20-39281-1	Yes
SS121	02/11/2021	20-39281-1	Yes
SS122	02/11/2021	20-39281-1	Yes



<b>SS123</b>	08/02/2021	21-56022-1	<b>Yes</b>
<b>SS124</b>	08/02/2021	21-56022-1	<b>Yes</b>
<b>SS125</b>	08/02/2021	21-56022-1	<b>Yes</b>
<b>SS126</b>	08/02/2021	21-56313-1	<b>Yes</b>

Amosite was detected within a sample take at SS118 at levels of <0.001%. This area was resampled on 20<sup>th</sup> November 2020 (I2 Analytical Report 20-43439-1). Chemical analysis of this sample indicated not detectable levels of asbestos within the soils. It can therefore be deduced that the ACM previously identified was due to cross contamination of imported materials during transport.

Chemical analysis identified no further contaminant exceedances, therefore it has been determined that the imported subsoil is suitable for utilisation within the proposed public park development.

Eleven topsoil samples were submitted for chemical analysis, the results confirmed that the material is suitable for use within the 600mm cover system within the public park development.

Table 3.2 provides a summary of topsoil samples undertaken for the site for a volume of 627 m<sup>3</sup>.

TABLE 3.2 SUMMARY OF TOPSOIL SAMPLES

<b>Sample Ref</b>	<b>Date Sampled</b>	<b>Report No.</b>	<b>Suitable for Use</b>
<b>TS101</b>	18/09/2020	20-30896-1	<b>Yes</b>
<b>TS102</b>	18/09/2020	20-30896-1	<b>Yes</b>
<b>TS103</b>	18/09/2020	20-30896-1	<b>Yes</b>
<b>TS104</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS105</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS106</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS107</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS108</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS109</b>	02/11/2020	20-39281-1	<b>Yes</b>
<b>TS110</b>	08/02/2021	21-56022-1	<b>Yes</b>
<b>TS111</b>	08/02/2021	21-56022-1	<b>Yes</b>

Chemical analysis identified no further contaminant exceedances, therefore it has been determined that the imported topsoil is suitable for utilisation within the proposed public park development.

All samples were analysed in accordance with the regulatory approved Remediation Strategy.

Sufficient samples have been obtained and analysed to meet the agreed sample frequency of 1 sample per 50m<sup>3</sup> topsoil and 1 sample per 250m<sup>3</sup> subsoil. Laboratory certificates are included within Appendix IV of this report.



## **4. CONCLUSIONS**

On completion of the validation works undertaken in relation to the installation of a chemically suitable cover system, E3P can confirm that all works were undertaken in strict accordance with the agreed Remediation Strategy and therefore would deem the site suitable for use as a public park development.

E3P do not consider that any further work is necessary.

**END OF REPORT**



# APPENDIX I LIMITATIONS



1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the client as indicated in Section 1.3.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.
10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.



# APPENDIX II

# GLOSSARY

## TERMS

<b>ACM</b>	Asbestos-containing material	<b>MMP</b>	Materials management plan
<b>ADS</b>	Acoustic design statement	<b>ND</b>	Not detected
<b>AST</b>	Above-ground storage tank	<b>NDP</b>	Nuclear density probe
<b>BGS</b>	British Geological Survey	<b>NMP</b>	Noise management plan
<b>BSI</b>	British Standards Institute	<b>NPSE</b>	Noise policy statement for England
<b>BTEX</b>	Benzene, toluene, ethylbenzene, xylenes	<b>NR</b>	Not recorded
<b>CA</b>	Coal Authority	<b>PAH</b>	Polycyclic aromatic hydrocarbon
<b>CBR</b>	California bearing ratio	<b>PCB</b>	Polychlorinated biphenyl
<b>CIEH</b>	Chartered Institute of Environmental Health	<b>PI</b>	Plasticity index
<b>CIRIA</b>	Construction Industry Research Association	<b>PID</b>	Photo ionisation detector
<b>CLEA</b>	Contaminated land exposure assessment	<b>POS</b>	Public open space
<b>CML</b>	Council of Mortgage Lenders	<b>PPE</b>	Personnel protective equipment
<b>CoC</b>	Contaminants of concern	<b>ProPG</b>	Professional practice guidance
<b>CSM</b>	Conceptual site model	<b>QA</b>	Quality assurance
<b>DNAPL</b>	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	<b>SGV</b>	Soil guideline value
<b>DWS</b>	Drinking water standard	<b>SPH</b>	Separate-phase hydrocarbon
<b>EA</b>	Environment Agency	<b>SPT</b>	Standard penetration test
<b>EQS</b>	Environmental quality standard	<b>SVOC</b>	Semi-volatile organic compound
<b>FFL</b>	Finished floor level	<b>TPH</b>	Total and speciated petroleum hydrocarbon
<b>GAC</b>	General assessment criteria	<b>TPH CWG</b>	Total Petroleum Hydrocarbon (Criteria Working Group)
<b>GL</b>	Ground level	<b>UKWIR</b>	United Kingdom Water Infrastructure Risk
<b>GSV</b>	Gas screening value	<b>UST</b>	Underground storage tank
<b>HCV</b>	Health criteria value	<b>VCC</b>	Vibro-concrete column
<b>ICSM</b>	Initial conceptual site model	<b>VOC</b>	Volatile organic compound
<b>LEL</b>	Lower explosive limit	<b>VRSC</b>	Vibro-replacement stone columns
<b>LMRL</b>	Lower method reporting limit	<b>VSC</b>	Vibro-stone columns
<b>LNAPL</b>	Light non-aqueous phase liquid (petrol, diesel, kerosene)	<b>WHO</b>	World Health Organisation
<b>MCV</b>	Moisture condition value	<b>WRAP</b>	Waste and Resources Action Programme



<b>MIBK</b>	Methyl isobutyl ketone	<b>WTE</b>	Water table elevation
<b>m</b>	Metres	<b>ppm</b>	Parts per million
<b>km</b>	Kilometres	<b>mg/m<sup>3</sup></b>	Milligram per metre cubed
<b>% v/v</b>	Percent volume in air	<b>m bgl</b>	Metres below ground level
<b>mb</b>	Millibars (atmospheric pressure)	<b>m bcl</b>	Metre below cover level
<b>l/hr</b>	Litres per hour	<b>mAOD</b>	Metres above ordnance datum (sea level)
<b>µg/l</b>	Micrograms per litre (parts per billion)	<b>kN/m<sup>2</sup></b>	Kilonewtons per metre squared
<b>ppb</b>	Parts per billion	<b>µm</b>	Micrometre
<b>mg/kg</b>	Milligrams per kilogram (parts per million)	<b>SSRT</b>	Site Specific Remediation Target
<b>PSD</b>	Particle Size Distribution	<b>DD</b>	Dry Density
<b>CL:AIRE</b>	Contaminated Land: Applications in Real Environments	<b>Mc</b>	Moisture Content
<b>ρ</b>	Bulk Density	<b>GPR</b>	Ground Penetrating Radar
<b>NDP</b>	Nuclear Density Probe	<b>FFL</b>	Finished Floor Level
<b>LEL</b>	Lower Explosive Limit	<b>UKWIR</b>	UK Water Industry Research
<b>CIRIA</b>	Construction Industry Research and Information Association	<b>LOD</b>	Limit of Detection



# APPENDIX III LETTERS





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Ref: 14-266 V1  
Date: 2<sup>nd</sup> March 2021

Philip Morgan  
Alder Hey Children's Hospital

By Email

Dear Phillip,

## **COVER SYSTEM VALIDATION SPRINGFIELD PARK – PHASE 1 ALDER HEY CHILDRENS HOSPITAL**

An E3P engineer attended the above site to validate the thickness of the cover system that had been placed within the public park landscaped area of Springfield Park Phase 1 at locations 1-13 at Alder Hey Children's Hospital.

In total 13No. hand excavated trial pits were advanced with the resulting strata detailed to the rear of this letter. Drawing 14-266-005 identified each location within Phase 1 of Springfield Park.

All trial pits were completed to highlight the required cover system of 600mm (150mm topsoil and 450mm subsoil).

E3P can confirm that our independent validation demonstrates that all areas of the landscaped areas have been installed with 150mm of certified topsoil and at least 450mm subsoil above a geotextile layer in accordance with the NHBC requirements for a site of this nature.

### **TOPSOIL**

E3P attended site between September 2020 and February 2021 to obtain samples of the stockpiled topsoil deposits which were analysed in accordance with the E3P Remediation Strategy. Chemical analysis confirmed that these topsoil deposits were chemically suitable for use within the proposed landscaping areas.

Chemical analysis results are included within lab reports 20-30896-1, 20-39281-1 and 21-56022-1 (attached to this letter).



## SUBSOIL

E3P attended site between August 2020 and February 2021 to obtain subsoil samples which were analysed in accordance with the E3P Remediation Strategy. Chemical analysis confirmed that these subsoil deposits were chemically suitable for use within the proposed landscaping areas.

Chemical analysis results are included within lab reports 20-27770-2, 20-32789-1, 20-39281-1, 21-56022-1 and 21-56313-1 (attached to this letter)

Cover system validation photographs are enclosed within this letter.

I trust this information is satisfactory to your requirements, and should I be able to be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

For and on behalf of E3P Ltd



Elizabeth Fearn  
Geo-Environmental Consultant





## Site: Alder Hey children's Hospital

Date: 19-02-2021	Project Number: 14-266
Project Manager: E. Fearn	E3P Engineer: J. James
Plot Numbers Validated: 1-13	

### Chemical Laboratory Analysis

Analysis for topsoil and subsoil undertaken by I2 Analytical Laboratory using UKAS accredited methods where applicable.

Chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos.

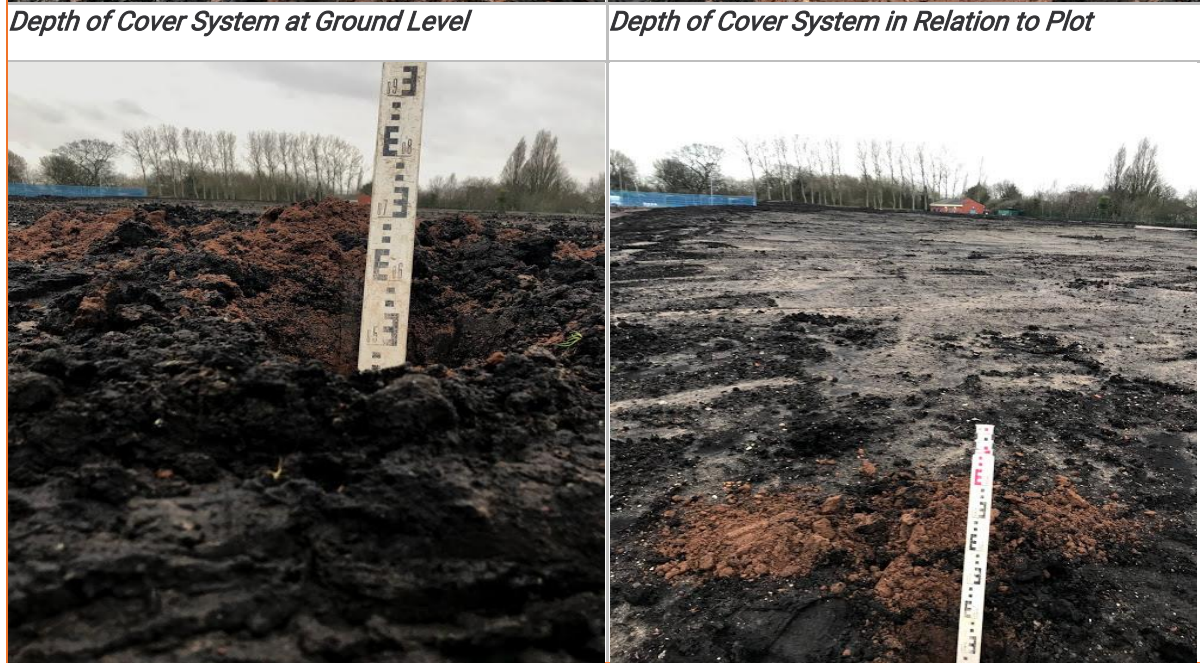
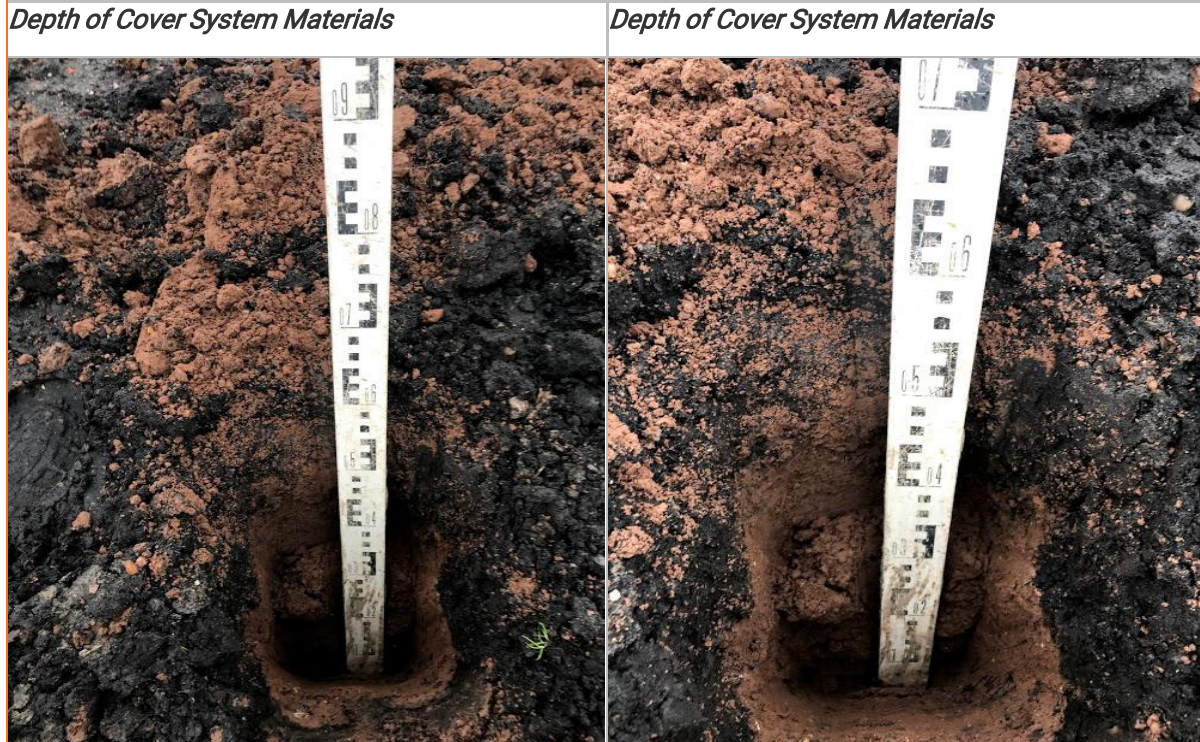
Sampling frequency in accordance with the agreed Remediation Strategy. Laboratory analysis certificates attached to this validation certificate.

	Topsoil	Subsoil
<i>Chemical analysis confirmed materials suitable?</i>	Pass	Pass
<i>Further Comments</i>	N/A	N/A



Location No: 1

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL





Location No: 2

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 3

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 4

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 5

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 6

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 7

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 8

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



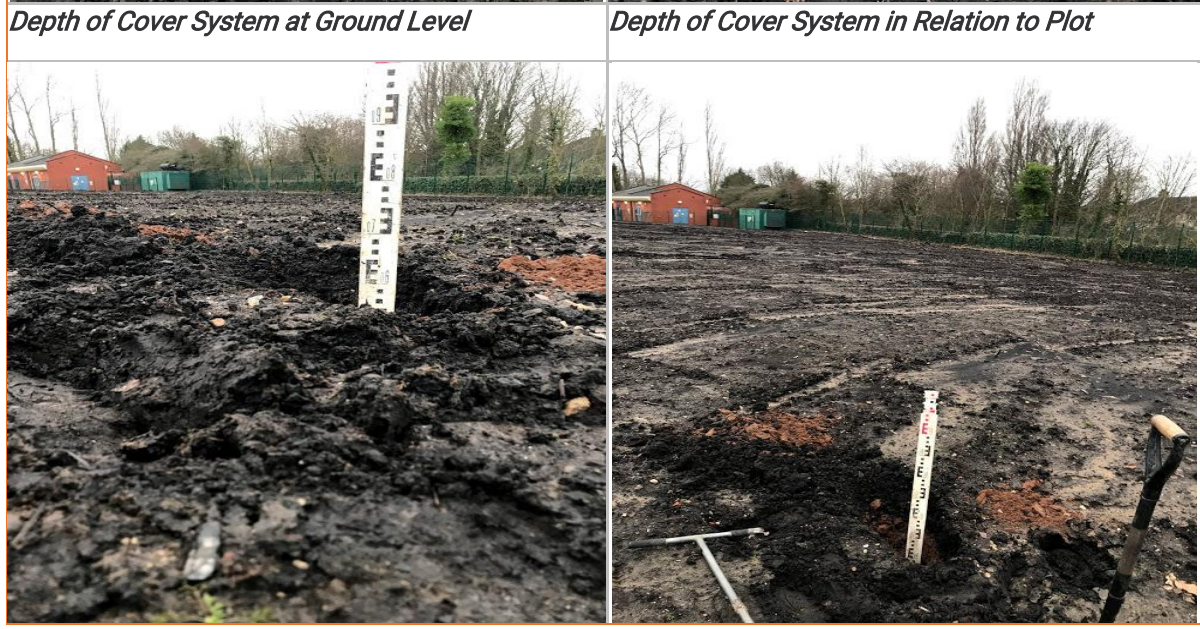
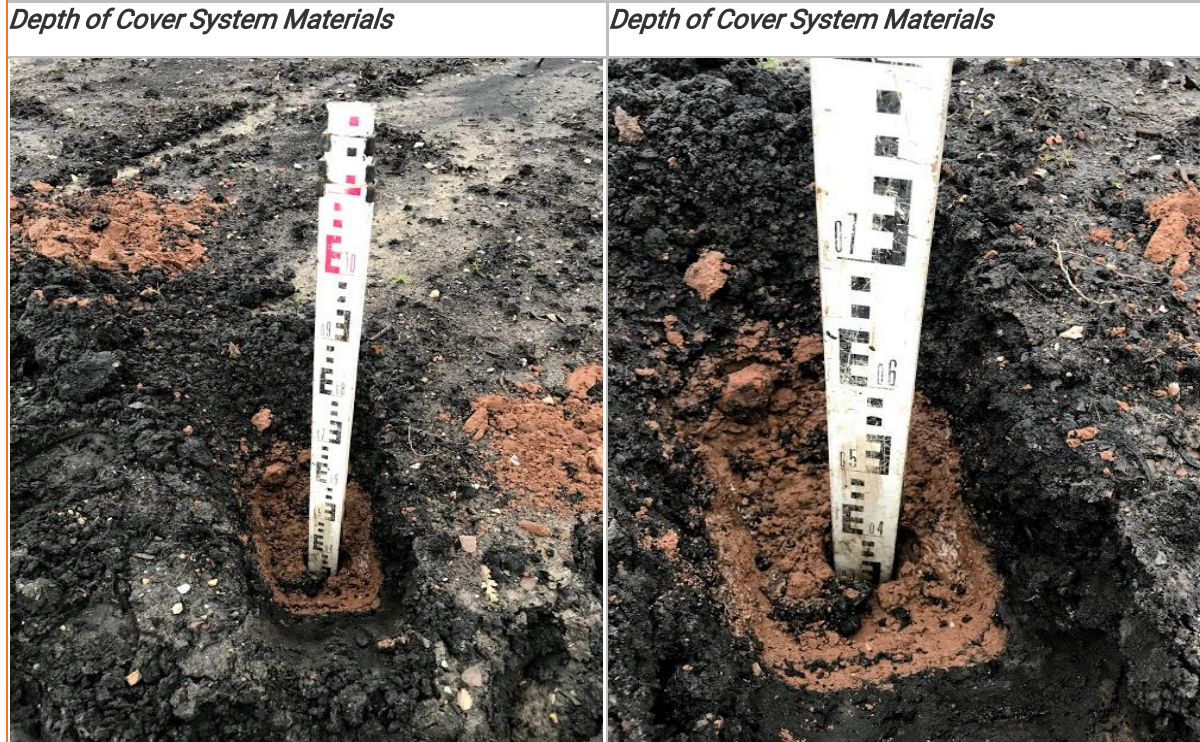
*Depth of Cover System in Relation to Plot*





Location No: 9

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL





Location No: 10

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 11

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 12

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



*Depth of Cover System at Ground Level*



*Depth of Cover System in Relation to Plot*





Location No: 13

Depth of Strata (m bgl)	0.00-0.15	Validated TOPSOIL
	0.15-0.60	Validated SUBSOIL

*Depth of Cover System Materials*



*Depth of Cover System Materials*



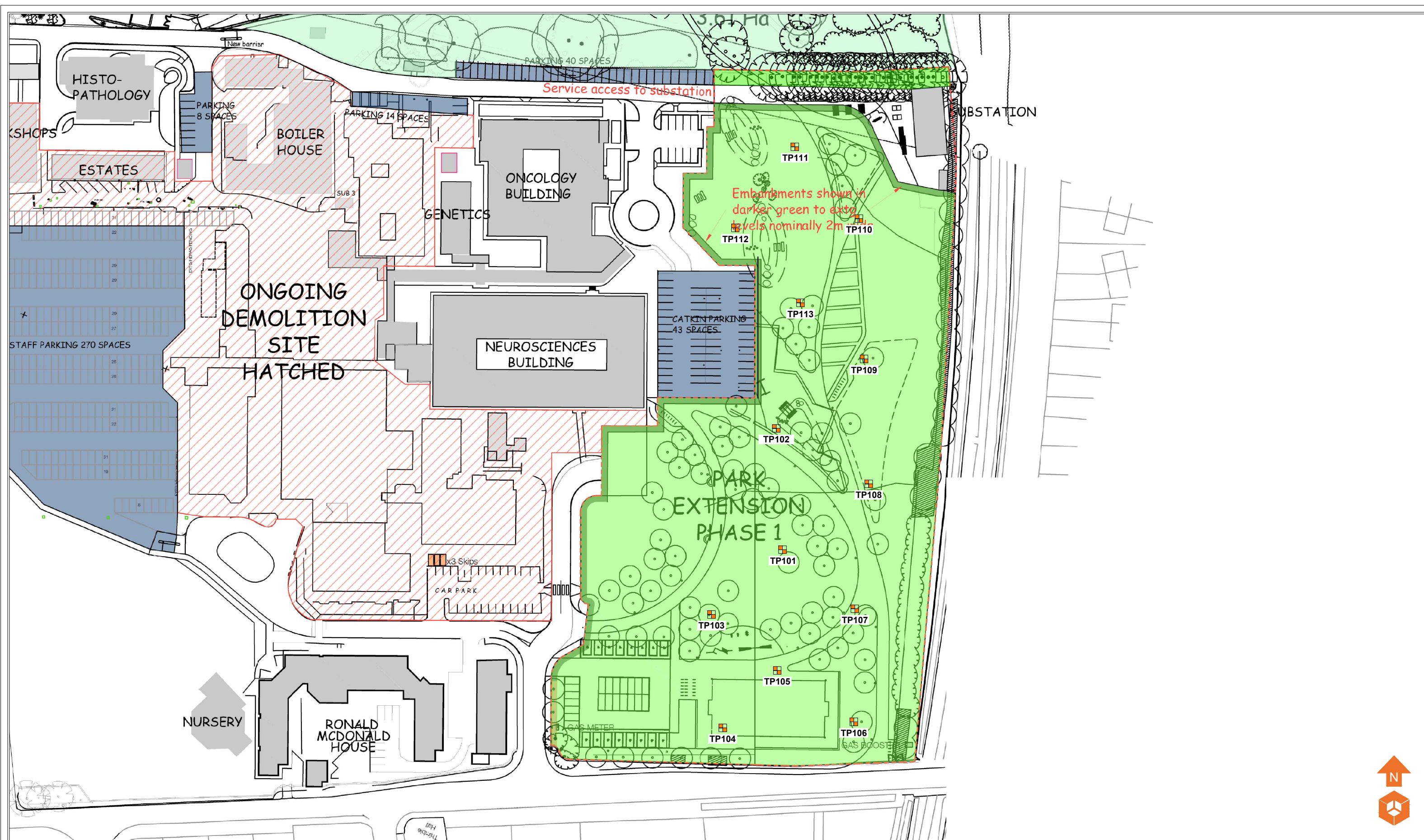
*Depth of Cover System at Ground Level*




*Depth of Cover System in Relation to Plot*







Location Symbols  
 Approximate Trial Pit Location

Notes:				
P1	REVA	24.02.2021	CB	EF
Phase	Issue	Date	Drawn	Checked

Client:	
Alder Hey Children's Hospital	
Job Title:	
Alder Hey Children's Hospital	

Job No:	14-266	Date:	24.02.2021
Drawing No:	005	Scale:	NTS @ A3
Drawing Title:		Exploratory Hole Location Plan	


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# APPENDIX IV CHEMICAL TESTING RESULTS



4041



Environmental Science

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Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS**t:** 01923 225404**f:** 01923 237404**e:** reception@i2analytical.com**e:** steph@e3p.co.uk**Analytical Report Number : 20-27770**

Replaces Analytical Report Number: 20-27770, issue no. 1

Client references/information amended.

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	28/08/2020
<b>Your job number:</b>	14-266	<b>Samples instructed on/ Analysis started on:</b>	01/09/2020
<b>Your order number:</b>		<b>Analysis completed by:</b>	08/09/2020
<b>Report Issue Number:</b>	2	<b>Report issued on:</b>	15/09/2020
<b>Samples Analysed:</b>	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.



Environmental Science

Analytical Report Number: 20-27770

Project / Site name: Alder Hey

Lab Sample Number	1609087	1609088	1609089
Sample Reference	SS101	SS102	SS103
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	27/08/2020	27/08/2020	27/08/2020
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	%	N/A	NONE	12	13	11
Total mass of sample received	kg	0.001	NONE	0.7	0.75	0.76

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	9.1	9.4	9.6
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	1200	1000	1700
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	550	430	850
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.27	0.21	0.42
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	273	213	423
Sulphide	mg/kg	1	MCERTS	3	8.4	13
Total Sulphur	mg/kg	50	MCERTS	430	370	600

#### 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	0.94	0.62	0.83
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.2
Fluoranthene	mg/kg	0.05	MCERTS	1.2	0.86	1.2
Pyrene	mg/kg	0.05	MCERTS	1.4	0.88	1.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.63	0.44	0.62
Chrysene	mg/kg	0.05	MCERTS	0.5	0.38	0.56
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.56	0.42	0.71
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.39	0.24	0.27
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.58	0.4	0.63
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.24
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	0.32

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.21	4.24	6.85
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Analytical Report Number: 20-27770  
 Project / Site name: Alder Hey

<b>Lab Sample Number</b>				1609087	1609088	1609089
<b>Sample Reference</b>				SS101	SS102	SS103
<b>Sample Number</b>				None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>				27/08/2020	27/08/2020	27/08/2020
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>			

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.4	4.6	6
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 (aqua regia extractable)	mg/kg	1	MCERTS	12	11	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	9.7	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	47	46
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.9	8.8	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	43	38	52

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0	16
TPH (C21 - C35)	mg/kg	1	MCERTS	< 1.0	< 1.0	37
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	< 10	< 10	55

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



**Analytical Report Number : 20-27770**

**Project / Site name: Alder Hey**

\* 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 *
1609087	SS101	None Supplied	None Supplied	Brown clay and sand with gravel.
1609088	SS102	None Supplied	None Supplied	Brown clay and sand with gravel.
1609089	SS103	None Supplied	None Supplied	Brown clay and sand with gravel.



Environmental Science

**Analytical Report Number : 20-27770**

**Project / Site name: Alder Hey**

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
Total sulphate (as SO <sub>4</sub> in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	MCERTS
Sulphate, water soluble, in soil	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

**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.**



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Environmental Science

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**Analytical Report Number : 20-30896**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	18/09/2020
<b>Your job number:</b>	14266	<b>Samples instructed on/ Analysis started on:</b>	18/09/2020
<b>Your order number:</b>	14266-JN-B	<b>Analysis completed by:</b>	25/09/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	25/09/2020
<b>Samples Analysed:</b>	3 soil samples		

**Signed:** *A. Czerwińska*

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

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

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

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

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

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

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





Analytical Report Number: 20-30896

Project / Site name: Alder Hey

Your Order No: 14266-JN-B

Lab Sample Number				1624275	1624276	1624277
Sample Reference				TS101	TS102	TS103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating
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	%	N/A	NONE	25	23	24
Total mass of sample received	kg	0.001	NONE	0.41	0.43	0.45

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	7.1	7.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	590	630	540
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	160	150	160
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.082	0.074	0.078
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	81.9	73.5	78.2
Sulphide	mg/kg	1	MCERTS	3.3	2.4	3
Total Sulphur	mg/kg	50	MCERTS	880	980	1000

#### 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	0.69	0.47	0.47
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.87	0.8	0.87
Pyrene	mg/kg	0.05	MCERTS	0.86	0.78	0.89
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.54	0.49	0.46
Chrysene	mg/kg	0.05	MCERTS	0.51	0.39	0.51
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.59	0.44	0.51
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.21	0.17	0.25
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.36	0.43	0.44
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.21	0.28	0.24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.31	0.29	0.3

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	5.15	4.54	4.94
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#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	8	8.6
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 (aqua regia extractable)	mg/kg	1	MCERTS	13	13	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26	25	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	58	55	95
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	9.9	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	49	50



Analytical Report Number: 20-30896

Project / Site name: Alder Hey

Your Order No: 14266-JN-B

<b>Lab Sample Number</b>				1624275	1624276	1624277
<b>Sample Reference</b>				TS101	TS102	TS103
<b>Sample Number</b>				None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>				None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>				Deviating	Deviating	Deviating
<b>Time Taken</b>				None Supplied	None Supplied	None Supplied
<b>Analytical Parameter (Soil Analysis)</b>				<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	1.6	< 1.0
TPH (C21 - C35)	mg/kg	1	MCERTS	35	27	24
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	37	30	26

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



**Analytical Report Number : 20-30896**

**Project / Site name: Alder Hey**

\* 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 *
1624275	TS101	None Supplied	None Supplied	Brown loam with gravel and vegetation.
1624276	TS102	None Supplied	None Supplied	Brown loam with gravel and vegetation.
1624277	TS103	None Supplied	None Supplied	Brown loam with gravel and vegetation.



Environmental Science

**Analytical Report Number : 20-30896**

**Project / Site name: Alder Hey**

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	MCERTS
Sulphate, water soluble, in soil	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

**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.**

# Sample Deviation Report



Analytical Report Number : 20-30896

Project / Site name: Alder Hey

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TS101	None Supplied	S	1624275	a	None Supplied	None Supplied	None Supplied
TS102	None Supplied	S	1624276	a	None Supplied	None Supplied	None Supplied
TS103	None Supplied	S	1624277	a	None Supplied	None Supplied	None Supplied



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Environmental Science

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**Analytical Report Number : 20-32789**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	29/09/2020
<b>Your job number:</b>	14-266	<b>Samples instructed on/ Analysis started on:</b>	29/09/2020
<b>Your order number:</b>	14-266 MW C	<b>Analysis completed by:</b>	07/10/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	07/10/2020
<b>Samples Analysed:</b>	11 soil samples		

**Signed:**

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

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

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

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

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

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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.



Environmental Science

Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number	1634591	1634592	1634593	1634594
Sample Reference	SS104	SS105	SS106	SS107
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	28/09/2020	28/09/2020	28/09/2020	28/09/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	8.6	8.8	13	7.9
Total mass of sample received	kg	0.001	NONE	0.49	0.48	0.5	0.51

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

pH - Automated	pH Units	N/A	MCERTS	8.8	9.3	9.2	9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	1100	770	1300	1100
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	400	300	500	460
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.2	0.15	0.25	0.23
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	203	149	251	231
Sulphide	mg/kg	1	MCERTS	< 1.0	3	2.3	3.4
Total Sulphur	mg/kg	50	MCERTS	330	250	390	430

#### Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.4	0.24
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.23	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.39	1.6	1.3	2.2
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.54	1.2	1.3	2.6
Pyrene	mg/kg	0.05	MCERTS	0.59	1.3	1.2	2.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.32	0.61	0.54	1.1
Chrysene	mg/kg	0.05	MCERTS	0.38	0.61	0.73	0.98
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.47	0.6	1
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.3	0.46
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.42	0.54	0.92
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.25	0.46
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.36	0.54

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.22	6.73	7.77	13
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#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.3	6.1	6.1	5.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	9.9	12	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9	11	11	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	44	44	58
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.2	8.9	8.6	8.5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	45	43	44

#### Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number				1634591	1634592	1634593	1634594
Sample Reference				SS104	SS105	SS106	SS107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				28/09/2020	28/09/2020	28/09/2020	28/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	10
TPH (C21 - C35)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	23
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	35

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



Environmental Science

Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number	1634595	1634596	1634597	1634598
Sample Reference	SS108	SS109	SS110	SS111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	28/09/2020	28/09/2020	28/09/2020	28/09/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	9.1	8.1	11	13
Total mass of sample received	kg	0.001	NONE	0.55	0.49	0.5	0.51

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

pH - Automated	pH Units	N/A	MCERTS	9.3	9.6	9.3	9.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	1000	1400	920	1300
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	340	760	520	600
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.38	0.26	0.3
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	170	378	261	302
Sulphide	mg/kg	1	MCERTS	3.2	18	3.3	5.4
Total Sulphur	mg/kg	50	MCERTS	330	530	320	440

#### Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.7	0.53	1.3	0.91
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.25	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.8	0.79	1.9	1.2
Pyrene	mg/kg	0.05	MCERTS	0.83	0.87	1.9	1.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.46	0.44	1	0.7
Chrysene	mg/kg	0.05	MCERTS	0.43	0.37	0.8	0.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.43	0.4	0.88	0.73
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.23	0.21	0.44	0.35
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.4	0.41	0.93	0.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.21	< 0.05	0.4	0.33
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.28	< 0.05	0.45	0.4

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	4.77	4.02	10.4	7.19
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#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.3	6.7	6.1	5.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	11	11	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	10	8.9	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	52	55	49	58
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.5	6.9	9	8.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	50	34	41	44

#### Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number				1634595	1634596	1634597	1634598
Sample Reference				SS108	SS109	SS110	SS111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				28/09/2020	28/09/2020	28/09/2020	28/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	7.3	11	3.6	14
TPH (C21 - C35)	mg/kg	1	MCERTS	25	36	22	62
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	11
TPH Total C5 - C40	mg/kg	10	MCERTS	34	50	27	89

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



Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number	1634599	1634600	1634601
Sample Reference	SS112	SS113	SS114
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	28/09/2020	28/09/2020	28/09/2020
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	%	N/A	NONE	8.7	11	8.6
Total mass of sample received	kg	0.001	NONE	0.5	0.51	0.5

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	9.4	9.3	8.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	670	940	930
Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)	mg/kg	2.5	MCERTS	200	440	640
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.1	0.22	0.32
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	102	221	319
Sulphide	mg/kg	1	MCERTS	9.4	2.4	3.1
Total Sulphur	mg/kg	50	MCERTS	220	330	360

#### 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	0.57	0.22
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.34	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.31	2.8	1.2
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.61	0.28
Fluoranthene	mg/kg	0.05	MCERTS	0.51	4.8	1.8
Pyrene	mg/kg	0.05	MCERTS	0.52	4.6	1.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.3	2	0.85
Chrysene	mg/kg	0.05	MCERTS	0.28	1.5	0.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.8	0.73
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.76	0.38
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.6	0.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.68	0.36
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	0.86	0.44

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1.92	22.9	9.34
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#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.2	5	5.3
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 (aqua regia extractable)	mg/kg	1	MCERTS	7.8	11	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.6	9.7	8.7
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	55	32
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.6	8.5	8.4
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	28	43	30

#### Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-32789

Project / Site name: Alder Hey

Your Order No: 14-266 MW C

Lab Sample Number				1634599	1634600	1634601
Sample Reference				SS112	SS113	SS114
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				28/09/2020	28/09/2020	28/09/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	6	35	8.7
TPH (C21 - C35)	mg/kg	1	MCERTS	25	21	71
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	13
TPH Total C5 - C40	mg/kg	10	MCERTS	33	59	95

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



**Analytical Report Number : 20-32789**

**Project / Site name: Alder Hey**

\* 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 *
1634591	SS104	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634592	SS105	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634593	SS106	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634594	SS107	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634595	SS108	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634596	SS109	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634597	SS110	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634598	SS111	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634599	SS112	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634600	SS113	None Supplied	None Supplied	Light brown clay and sand with gravel.
1634601	SS114	None Supplied	None Supplied	Light brown clay and sand with gravel.





Environmental Science

Analytical Report Number : 20-32789

Project / Site name: Alder Hey

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disper staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	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



**Analytical Report Number : 20-32789**  
**Project / Site name: Alder Hey**

**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
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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.



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## **Analytical Report Number : 20-39281**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	03/11/2020
<b>Your job number:</b>	14-266	<b>Samples instructed on/ Analysis started on:</b>	03/11/2020
<b>Your order number:</b>	14266-EF-D	<b>Analysis completed by:</b>	10/11/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	10/11/2020
<b>Samples Analysed:</b>	15 soil samples		

**Signed:** *A. Czerwińska*

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

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

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

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

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

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

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



Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number	1671970	1671971	1671972	1671973			
Sample Reference	TS104	TS105	TS106	TS107			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied			
Date Sampled	02/11/2020	02/11/2020	02/11/2020	02/11/2020			
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	41	40	41	35
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	0.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.7	6.9	6.8	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	420	520	510	440
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.14	0.074	0.15	0.057
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	280	150	290	110
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	141	74.2	147	57.1
Sulphide	mg/kg	1	MCERTS	< 1.0	3	1.7	< 1.0
Total Sulphur	mg/kg	50	MCERTS	1100	860	910	870

#### Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.8	1.2	0.62	0.57
Anthracene	mg/kg	0.05	MCERTS	0.22	0.37	0.17	0.34
Fluoranthene	mg/kg	0.05	MCERTS	1.1	2	0.89	1.1
Pyrene	mg/kg	0.05	MCERTS	0.9	1.8	0.75	1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.61	1	0.48	0.62
Chrysene	mg/kg	0.05	MCERTS	0.38	0.88	0.42	0.54
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.57	0.8	0.4	0.58
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.21	0.54	0.31	0.36
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.49	0.84	0.46	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.23	0.33	< 0.05	0.26
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.27	0.39	< 0.05	0.3

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	5.73	10.1	4.5	6.26
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Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number				1671970	1671971	1671972	1671973
Sample Reference				TS104	TS105	TS106	TS107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2020	02/11/2020	02/11/2020	02/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				

**Heavy Metals / Metalloids**

	Units	Limit of detection	Accreditation Status	1671970	1671971	1671972	1671973
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.9	6.6	6.2	6.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.5	9.7	9.2	8.9
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	18	18	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	33	29	29
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.7	8.2	8.2	8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	32	30	30

**Petroleum Hydrocarbons**

	Units	Limit of detection	Accreditation Status	1671970	1671971	1671972	1671973
TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C21 - C35)	mg/kg	1	MCERTS	26	29	24	21
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	28	31	26	23

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

Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number	1671974	1671975	1671976	1671977			
Sample Reference	TS108	TS109	SS114	SS115			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied			
Date Sampled	02/11/2020	02/11/2020	02/11/2020	02/11/2020			
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	33	35	14	13
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	0.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.8	7.7	9.3	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	380	380	1200	690
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.063	0.079	0.19	0.084
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	130	160	370	170
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	62.9	78.9	186	83.9
Sulphide	mg/kg	1	MCERTS	1.3	1.8	12	15
Total Sulphur	mg/kg	50	MCERTS	790	710	420	300

#### Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.24	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.38	0.3
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.24	0.23
Phenanthrene	mg/kg	0.05	MCERTS	0.76	0.78	1.7	1.4
Anthracene	mg/kg	0.05	MCERTS	0.16	0.21	0.31	0.28
Fluoranthene	mg/kg	0.05	MCERTS	1.3	1.3	2	2.9
Pyrene	mg/kg	0.05	MCERTS	1.2	1.2	2.1	2.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.69	0.68	1.1	1.7
Chrysene	mg/kg	0.05	MCERTS	0.6	0.59	0.93	1.3
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.62	0.64	1.2	1.8
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.38	0.4	0.51	0.77
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.66	0.68	1.1	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	0.28	0.42	0.65
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.32	0.33	0.48	0.83

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	7.01	7.04	12.6	16.4
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Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number				1671974	1671975	1671976	1671977
Sample Reference				TS108	TS109	SS114	SS115
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2020	02/11/2020	02/11/2020	02/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Heavy Metals / Metalloids</b>							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.5	6.1	8.2	7.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	8.1	17	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	16	31	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	36	27	48	55
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.6	7.1	6.9	6.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	35	30	55	49

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	7.8
TPH (C16 - C21)	mg/kg	1	MCERTS	4.5	< 1.0	4.9	14
TPH (C21 - C35)	mg/kg	1	MCERTS	31	59	9.4	69
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	38	61	16	93

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

Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number	1671978	1671979	1671980	1671981			
Sample Reference	SS116	SS117	SS118	SS119			
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied			
Date Sampled	02/11/2020	02/11/2020	02/11/2020	02/11/2020			
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	16	13	15	13
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	0.4

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

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.4	9.3	9.4	9.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	830	720	1100	750
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.21	0.12	0.26	0.12
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	420	240	520	250
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	208	120	261	124
Sulphide	mg/kg	1	MCERTS	6.3	37	4.2	15
Total Sulphur	mg/kg	50	MCERTS	370	350	450	450

#### Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0.05	0.46
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.22	1.3	0.26	0.59
Fluorene	mg/kg	0.05	MCERTS	0.15	0.7	0.2	0.4
Phenanthrene	mg/kg	0.05	MCERTS	0.73	3.4	1.1	1.9
Anthracene	mg/kg	0.05	MCERTS	0.14	0.53	0.16	0.35
Fluoranthene	mg/kg	0.05	MCERTS	1	3.8	1.3	2.7
Pyrene	mg/kg	0.05	MCERTS	1.1	4.1	1.3	3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.7	2.3	0.7	1.7
Chrysene	mg/kg	0.05	MCERTS	0.58	2	0.63	1.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.75	2.6	0.71	2
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.32	1.1	0.32	0.89
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.63	2.2	0.6	1.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.83	< 0.05	0.69
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	0.84

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.37	26.6	7.3	18.6
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Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number				1671978	1671979	1671980	1671981
Sample Reference				SS116	SS117	SS118	SS119
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2020	02/11/2020	02/11/2020	02/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
<b>Heavy Metals / Metalloids</b>							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8	7.7	8.8	7.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	13	12	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	16	12	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	53	60	52	62
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.6	8.3	7.1	7.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	54	43	53

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	6.8	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	6	13	3.7	7.2
TPH (C21 - C35)	mg/kg	1	MCERTS	22	39	19	29
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	30	61	25	38

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



Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number	1671982	1671983	1671984			
Sample Reference	SS120	SS121	SS122			
Sample Number	None Supplied	None Supplied	None Supplied			
Depth (m)	None Supplied	None Supplied	None Supplied			
Date Sampled	02/11/2020	02/11/2020	02/11/2020			
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	15	14	13
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.5	9.3	9.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	760	800	690
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.2	0.11	0.11
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	390	220	230
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	195	108	115
Sulphide	mg/kg	1	MCERTS	5.3	20	6.8
Total Sulphur	mg/kg	50	MCERTS	370	370	330

#### 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	0.32	0.31	0.2
Fluorene	mg/kg	0.05	MCERTS	0.29	0.21	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2	1.3	1
Anthracene	mg/kg	0.05	MCERTS	0.47	0.24	0.17
Fluoranthene	mg/kg	0.05	MCERTS	2.2	2.2	1.7
Pyrene	mg/kg	0.05	MCERTS	2.2	2.3	1.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1	1.6	1.2
Chrysene	mg/kg	0.05	MCERTS	0.95	1.2	0.93
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1	1.9	1.4
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.44	0.79	0.58
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.88	1.6	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.42	0.63	0.51
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.4	0.73	0.55

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	12.8	15	11.4
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Analytical Report Number: 20-39281

Project / Site name: Alder Hey

Your Order No: 14266-EF-D

Lab Sample Number				1671982	1671983	1671984
Sample Reference				SS120	SS121	SS122
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				02/11/2020	02/11/2020	02/11/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
<b>Heavy Metals / Metalloids</b>						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.8	8.1	6.7
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 (aqua regia extractable)	mg/kg	1	MCERTS	12	15	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.9	15	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	58	57
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.2	8.7	8.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.2	< 1.0	1.1
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	38	56	50

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	14	6.4	16
TPH (C21 - C35)	mg/kg	1	MCERTS	21	19	38
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	38	27	56

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



**Analytical Report Number:** 20-39281  
**Project / Site name:** Alder Hey  
**Your Order No:** 14266-EF-D

## 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
1671980	SS118		130	Loose Fibres	Amosite	< 0.001	< 0.001

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



**Analytical Report Number : 20-39281**

**Project / Site name: Alder Hey**

\* 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 *
1671970	TS104	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671971	TS105	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671972	TS106	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671973	TS107	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671974	TS108	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671975	TS109	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1671976	SS114	None Supplied	None Supplied	Brown clay and sand with gravel.
1671977	SS115	None Supplied	None Supplied	Brown clay and sand with gravel.
1671978	SS116	None Supplied	None Supplied	Brown clay and sand with gravel.
1671979	SS117	None Supplied	None Supplied	Brown clay and sand with gravel.
1671980	SS118	None Supplied	None Supplied	Brown clay and sand with gravel.
1671981	SS119	None Supplied	None Supplied	Brown clay and sand with gravel.
1671982	SS120	None Supplied	None Supplied	Brown clay and sand with gravel.
1671983	SS121	None Supplied	None Supplied	Brown clay and sand with gravel.
1671984	SS122	None Supplied	None Supplied	Brown clay and sand with gravel.

Analytical Report Number : 20-39281

Project / Site name: Alder Hey

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
Total sulphate (as SO <sub>4</sub> in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	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
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE



**Analytical Report Number : 20-39281**  
**Project / Site name: Alder Hey**

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

<b>Analytical Test Name</b>	<b>Analytical Method Description</b>	<b>Analytical Method Reference</b>	<b>Method number</b>	<b>Wet / Dry Analysis</b>	<b>Accreditation Status</b>
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.**



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## **Analytical Report Number : 21-56022**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	09/02/2021
<b>Your job number:</b>	14-266	<b>Samples instructed on/ Analysis started on:</b>	09/02/2021
<b>Your order number:</b>	14266-EF-G	<b>Analysis completed by:</b>	16/02/2021
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	18/02/2021
<b>Samples Analysed:</b>	5 soil samples		

**Signed:** *A. Czerwińska*

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

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

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

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

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

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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: 21-56022

Project / Site name: Alder Hey

Your Order No: 14266-EF-G

Lab Sample Number	1765756	1765757	1765758	1765759	1765760			
Sample Reference	SS123	SS124	SS125	TS110	TS111			
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	08/02/2021	08/02/2021	08/02/2021	08/02/2021	08/02/2021			
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	14	15	35	28
Total mass of sample received	kg	0.001	NONE	0.5	0.5	0.5	0.5	0.5

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

pH - Automated	pH Units	N/A	MCERTS	9.4	9.2	9.5	6.7	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	720	1300	850	580	480
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.14	0.16	0.15	0.17	0.11
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	290	320	300	350	230
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	144	161	148	173	113
Sulphide	mg/kg	1	MCERTS	81	40	56	10	11
Total Sulphur	mg/kg	50	MCERTS	370	390	340	970	720

#### 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	< 0.05	< 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	0.58	1.2	1.8	0.42	0.28
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.29	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.8	2.4	2.9	0.64	0.47
Pyrene	mg/kg	0.05	MCERTS	0.87	2.2	2.9	0.63	0.51
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.42	1.2	1.4	0.33	0.31
Chrysene	mg/kg	0.05	MCERTS	0.5	0.94	1.4	0.31	0.28
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.44	1.1	1.6	0.29	0.32
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.38	0.54	0.68	0.21	0.17
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.42	0.85	1.2	0.33	0.35
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.23	0.43	0.72	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.34	0.56	0.99	< 0.05	< 0.05

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	4.98	11.3	15.9	3.16	2.69
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Analytical Report Number: 21-56022

Project / Site name: Alder Hey

Your Order No: 14266-EF-G

<b>Lab Sample Number</b>	1765756				1765757	1765758	1765759	1765760
<b>Sample Reference</b>	SS123				SS124	SS125	TS110	TS111
<b>Sample Number</b>	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
<b>Depth (m)</b>	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
<b>Date Sampled</b>	08/02/2021				08/02/2021	08/02/2021	08/02/2021	08/02/2021
<b>Time Taken</b>	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**Heavy Metals / Metalloids**

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.9	5.6	6.6	7.1	7.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	13
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	10	9.6	9.4	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	17	14	21	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	34	31	38	130	41
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.1	7	6.8	8.7	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34	34	37	38	37

**Petroleum Hydrocarbons**

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	3.4	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	5.1	5.3	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	11	7.1	12	< 1.0	< 1.0
TPH (C21 - C35)	mg/kg	1	MCERTS	25	16	28	< 1.0	< 1.0
TPH (C35 - C40)	mg/kg	10	MCERTS	10	< 10	< 10	< 10	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	60	31	42	< 10	< 10

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

**Analytical Report Number : 21-56022**

**Project / Site name: Alder Hey**

\* 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 *
1765756	SS123	None Supplied	None Supplied	Brown sand with gravel.
1765757	SS124	None Supplied	None Supplied	Brown sand with gravel.
1765758	SS125	None Supplied	None Supplied	Brown sand with gravel.
1765759	TS110	None Supplied	None Supplied	Black sandy clay.
1765760	TS111	None Supplied	None Supplied	Black sandy clay.

**Analytical Report Number : 21-56022**  
**Project / Site name: Alder Hey**

**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 disperin staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
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
Total sulphate (as SO <sub>4</sub> in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS





**Analytical Report Number : 21-56022**  
**Project / Site name: Alder Hey**

**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
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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.



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## **Analytical Report Number : 21-56313**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	09/02/2021
<b>Your job number:</b>	14 266	<b>Samples instructed on/ Analysis started on:</b>	11/02/2021
<b>Your order number:</b>	14266 EF G	<b>Analysis completed by:</b>	18/02/2021
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	18/02/2021
<b>Samples Analysed:</b>	1 soil samples		

**Signed:**

Rachel Bradley  
Deputy Quality Manager  
**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: 21-56313

Project / Site name: Alder Hey

Your Order No: 14266 EF G

<b>Lab Sample Number</b>				1767301
<b>Sample Reference</b>				SS126
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				08/02/2021
<b>Time Taken</b>				None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	0.5

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

pH - Automated	pH Units	N/A	MCERTS	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	560
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.12
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	240
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	121
Sulphide	mg/kg	1	MCERTS	8.5
Total Sulphur	mg/kg	50	MCERTS	280

#### 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	0.31
Fluorene	mg/kg	0.05	MCERTS	0.23
Phenanthrene	mg/kg	0.05	MCERTS	2
Anthracene	mg/kg	0.05	MCERTS	0.51
Fluoranthene	mg/kg	0.05	MCERTS	2.5
Pyrene	mg/kg	0.05	MCERTS	2.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5
Chrysene	mg/kg	0.05	MCERTS	1
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.54
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.61
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.69

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	14.5
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#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.4
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34

#### Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1



Analytical Report Number: 21-56313

Project / Site name: Alder Hey

Your Order No: 14266 EF G

<b>Lab Sample Number</b>				1767301
<b>Sample Reference</b>				SS126
<b>Sample Number</b>				None Supplied
<b>Depth (m)</b>				None Supplied
<b>Date Sampled</b>				08/02/2021
<b>Time Taken</b>				None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>	
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	8.3
TPH (C16 - C21)	mg/kg	1	MCERTS	13
TPH (C21 - C35)	mg/kg	1	MCERTS	27
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	50

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





**Analytical Report Number : 21-56313**  
**Project / Site name: Alder Hey**

\* 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 *
1767301	SS126	None Supplied	None Supplied	Brown loam with gravel.

**Analytical Report Number : 21-56313**  
**Project / Site name: Alder Hey**

**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
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
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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 Sulphur in soil	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
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
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	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS



**Analytical Report Number : 21-56313**  
**Project / Site name: Alder Hey**

**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
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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.



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## **Analytical Report Number : 20-43439**

<b>Project / Site name:</b>	Alder Hey	<b>Samples received on:</b>	24/11/2020
<b>Your job number:</b>	14266	<b>Samples instructed on/ Analysis started on:</b>	24/11/2020
<b>Your order number:</b>	14266ES E	<b>Analysis completed by:</b>	01/12/2020
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	01/12/2020
<b>Samples Analysed:</b>	1 soil sample		

**Signed:** *A. Czerwińska*

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

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

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

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

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

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

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





**Analytical Report Number: 20-43439**  
**Project / Site name: Alder Hey**  
**Your Order No: 14266ES E**

<b>Lab Sample Number</b>					1695693
<b>Sample Reference</b>					SS123
<b>Sample Number</b>					None Supplied
<b>Depth (m)</b>					None Supplied
<b>Date Sampled</b>					20/11/2020
<b>Time Taken</b>					None Supplied
<b>Analytical Parameter (Soil Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	

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



Analytical Report Number : 20-43439  
Project / Site name: Alder Hey

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
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
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

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

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

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



Certificate issued to:-

Application No:19F/0916  
Date Issued: 12 May 2020

Cullinan Studio  
Foundry  
5 Baldwin Terrace  
Islington  
London  
N1 7RU

PLD

**TOWN AND COUNTRY PLANNING ACT 1990  
TOWN AND COUNTRY PLANNING (GENERAL DEVELOPMENT  
PROCEDURE) ORDER 1995**

**Location:** Royal Liverpool Childrens NHS Trust Alder Hey Hospital, Eaton Road, West Derby, Liverpool, L12 2AP

**Proposal:** To redevelop and expand Springfield Park, works to include hard and soft landscaping, surface water swale (pond) planting and trees, path network, lighting, seating, boundary and entrance treatments, children's play area, MUGA with lighting, and visitors carpark

**Applicant:** Royal Liverpool Childrens NHS Trust Alder Hey Hospital  
Alder Hey Children's Hospital  
Eaton Road  
West Derby  
Liverpool  
L12 2AP

**Date Valid:** 10/04/2019

In pursuance of its powers under the above-mentioned legislation, the Local Planning Authority on **12 May 2020 GRANTED** planning permission for the above-mentioned development in accordance with your application, subject to the compliance with the conditions specified on the attached schedule, for the reasons stated.

(see attached)

*Samantha Campbell*

**Head of Planning**

**Liverpool City Council**  
Cunard Building, Water Street, Liverpool, L3 1AH  
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E: [planningandbuildingcontrol@liverpool.gov.uk](mailto:planningandbuildingcontrol@liverpool.gov.uk)  
[www.liverpool.gov.uk](http://www.liverpool.gov.uk)

**SCHEDULE OF CONDITIONS AND REASONS**

Condition No	Condition
1	<p>The development hereby permitted shall begin before the expiration of 3 years from the date of this permission.</p> <p>REASON: To comply with Section 91 of the Town and Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.</p>
2	<p>The development hereby approved shall be carried out in accordance with the following drawings and documents:</p> <p>DAS &amp; supporting info</p> <ul style="list-style-type: none"> <li>" SpringfieldPark_DesignAndAccessStatement_Rev 3</li> <li>" TM391 R09 Addendum Words</li> <li>" 191010_Springfield Park Planning Requirements MUGA_Pond</li> </ul> <p>Architectural Drawings (appendix 1 of DAS)</p> <ul style="list-style-type: none"> <li>" AHCC-CUL-ZZ-ZZ-DR-A-0800-Site Location Plan-2</li> <li>" AHCC-CUL-ZZ-ZZ-DR-A-0801-Existing Park Location Plan-2</li> <li>" AHCC-CUL-ZZ-ZZ-DR-A-0802-Phasing Plan-2</li> </ul> <p>Landscape Drawings (appendix 2 of DAS)</p> <ul style="list-style-type: none"> <li>" TM391 - L00A - Materials &amp; Planting Strategy Key</li> <li>" TM391 - L01C - Landscape General Arrangement - North</li> <li>" TM391 - L02A - Landscape General Arrangement - South</li> <li>" TM391 - L03C - Planting Strategy - North</li> <li>" TM391 - L04A - Planting Strategy - South</li> </ul> <p>Ecology Report (appendix 3 of DAS)</p> <ul style="list-style-type: none"> <li>" Extended Phase 1 Habitat Survey &amp; Protected Species Survey / Assessment - Land at Alder Hey, July 2015</li> </ul> <p>Arboricultural Impact Assessment/Tree Constraints Plans/Tree Retention Removal And Protection Plans (appendix 4 of DAS)</p> <ul style="list-style-type: none"> <li>" JKK9351 - RPS - Alder Hey Hospital and Springfield Park Arboricultural Impact Assessment, 9th April 2019</li> <li>" JKK9351 - Figure 01.01, Tree Constraints Plan, RPS</li> <li>" JKK9351 - Figure 01.02, Tree Constraints Plan, RPS</li> <li>" JKK9351 - Figure 01.03, Tree Constraints Plan, RPS</li> <li>" JKK9351 - Figure 01.04, Tree Constraints Plan, RPS</li> <li>JKK9351 - Figure 02.01, Rev 01 - Tree Retention / Removal &amp; Protection Plan, RPS</li> <li>JKK9351 - Figure 02.02 - Tree Retention / Removal &amp; Protection Plan, RPS</li> <li>JKK9351 - Figure 02.03, Rev 01 - Tree Retention / Removal &amp; Protection Plan, RPS</li> <li>JKK9351 - Figure 02.04 - Tree Retention / Removal &amp; Protection Plan, RPS</li> </ul> <p>Ground Investigation - (appendix 5 of DAS)</p> <p>ESG Baseline desk study on preliminary ground investigation for Alder Hey Hospital,</p>



	<p>Liverpool. Report: R3040/BDS, Dec 2013</p> <p>ESG Factual Report On Ground Investigation for Alder Hey Hospital, Liverpool. Report No R5124-15, November 2015</p> <p>Flood Risk Assessment (appendix 6 of DAS) 219-134 - Alder Hey Springfield Park_FRA &amp; Drainage Strategy_RevP01, Ref: AHS-AJP-ZZ-XX-RP-C-3000, The Alan Johnston Partnership LLP, 16.08.19</p> <p>REASON: For the avoidance of doubt.</p>
3	<p>(a) Development of the pitches shall commence until the following documents have been submitted to and approved in writing by the Local Planning Authority after consultation with Sport England:</p> <p>(i) A detailed assessment of ground conditions carried out by a suitably qualified sports turf consultant (including drainage and topography) of the land proposed for the playing field which identifies constraints which could adversely affect playing field quality; and</p> <p>(ii) Where the results of the assessment to be carried out pursuant to (i) above identify constraints which could adversely affect playing field quality, a detailed scheme to address any such constraints. The scheme shall include a written specification of the proposed soils structure, proposed drainage, cultivation and other operations associated with grass and sports turf establishment and a programme of implementation and prepared by a suitably qualified sports turf consultant.</p> <p>(b) The approved scheme shall be carried out in full and in accordance with the approved programme of implementation. The land shall thereafter be maintained in accordance with the scheme and made available for playing field use in accordance with the scheme.</p> <p>Reason: To ensure that the playing field is prepared to an adequate standard and is fit for purpose and to accord with Development Plan Policy [insert relevant local plan policy] and paragraph 97 of the NPPF</p>
4	<p>Before the sports pitches are brought into use, a Management and Maintenance Scheme for the facility including management responsibilities, a maintenance schedule and a mechanism for review shall be submitted to and approved in writing by the Local Planning Authority after consultation with Sport England. The measures set out in the approved scheme shall be complied with in full, with effect from commencement of use of the sports pitches.</p> <p>Reason: To ensure that new facilities are capable of being managed and maintained to deliver a facility which is fit for purpose, sustainable and to ensure sufficient benefit of the development to sport and to accord with Development Plan Policy[insert relevant local plan policy] and paragraph 97 of the NPPF.</p>
5	<p>(a) Prior to their implementation and use on site, samples or specifications of all materials to be used in the external construction of this development shall be submitted to and approved in writing by the local planning authority.</p>

	<p>(b) The scheme shall be completed using the approved materials before the development is occupied/brought into use.</p> <p>REASON: To ensure a satisfactory external appearance.</p>
6	<p>(a) No works shall take place, including any demolition, site clearance or ground works, until a Construction Environmental Management Plan (CEMP) describing how construction will be managed to avoid, minimise and mitigate any adverse construction effects on the environment has been submitted to and approved in writing by the local planning authority. The CEMP shall include mitigation measures required for the purposes of Habitats Regulations Assessment conforming to the recommendations (set in the NE/MEAS consultation response).</p> <p>(b) The approved Construction Environmental Management Plan shall be adhered to throughout the construction period for the development.</p> <p>REASON: These details are needed prior to the commencement of development in order to ensure that any adverse impact on the environment during the period of construction will be minimised.</p>
7	<p>(a) No development shall take place, including any demolition, site clearance or ground works, until a full phasing plan has been submitted to, and approved in writing by the local planning authority.</p> <p>(b) The development shall be implemented in accordance with the approved phasing plan and shall only be varied with the prior written approval of the local planning authority.</p> <p>REASON: These details are needed prior to the commencement of development in order to ensure that the phases of development are carried out in a managed way and in order to safeguard the amenity of the surrounding occupiers .</p>
8	<p>(a) The approved landscaping scheme shall be completed either:</p> <p>(i) not later than the first planting season following first occupation of the development; or</p> <p>(ii) during the appropriate planting season progressively as the development proceeds, in accordance with a programme to be agreed in writing with the local planning authority.</p> <p>(b) All works must be carried out to BS 8545:2014 Trees: from nursery to independence in the landscape and BS 4428: 1989 Code of Practice for General Landscape Operations.</p> <p>(c) Any trees/plants which die, become diseased, damaged or are removed within 5 years of planting shall be replaced with trees/plants of similar sizes and species or as may otherwise be agreed with the local planning authority in the first available planting season thereafter.</p> <p>(d) An audit trail of the plant stock used for the scheme must be submitted to the Local Planning Authority on completion of the planting.</p>

	<p>REASON: It is in the interests of visual amenity and in accordance with the duty of the Council under Section 197 of the Town and Country Planning Act 1990 in respect of the planting and preservation of trees.</p>
9	<p>No part of the development shall be occupied or brought into use until a landscape management plan for all trees and undeveloped areas outside of the curtilage of any dwelling has been submitted to and approved in writing by the local planning authority. The plan shall include details of the timescale, programme and the body responsible for its implementation.</p> <p>The approved plan to be implemented in perpetuity. Any successors to the original body responsible for its implementation shall be notified to the local planning authority in writing within one month of any such change occurring.</p> <p>REASON: The City Council wishes to ensure that these areas are appropriately managed in the interests of visual amenity.</p>
10	<p>(a) Except for site clearance and remediation, no development shall commence until proposed footpath levels in relation to trees and their root protection areas have been submitted to and approved in writing by the local planning authority.</p> <p>(b) The development shall be carried out in accordance with the approved site levels and tree protection levels</p> <p>REASON: These details are not included in the application and the Council wishes to ensure that they are satisfactory.</p>
11	<p>The approved tree protection measures, as detailed in the approved Arboricultural Report shall be in place prior to the commencement of the works on site and shall be retained in place and must only be removed with the written agreement from the local planning authority.</p> <p>REASON: This action is needed prior to the commencement of development in order to ensure that the protection of trees has been implemented before commencement of any works that may be injurious to tree health, in the interests of visual amenity and in accordance with the duty of the Council under Section 197 of the Town and Country Planning Act 1990</p>
12	<p>(a) No part of the development shall be occupied or brought into use until a management plan for the continuous maintenance of public realm, hard and soft landscaping, in perpetuity for the lifetime of the development, has been submitted to and approved in writing by the local planning authority. The management plan shall include the following details:</p> <p>(i) locations of all new trees  (ii) size, species and methods of root containment of all new trees  iii) tree pit specification including size, soil type, irrigation, aeration, method of staking/anchorage, surface treatment  (iv) 3 5 year post planting maintenance regime, and  (v) financial arrangements concerning post adoption routine maintenance obligations.</p>

	<p>(b) The management plan shall be implemented in accordance with the approved details, at nil cost to the City Council.</p> <p>REASON: To safeguard visual and residential amenity, and highway safety.</p>
13	<p>(a) Details of the implementation, maintenance and management of the sustainable drainage system shall be submitted to and approved in writing by the local planning authority. Those details shall include:</p> <ul style="list-style-type: none"> <li>(i) a timetable for its implementation; and,</li> <li>(ii) a management and maintenance plan for the lifetime of the development;</li> <li>(iii) contact details of the person/company responsible for this maintenance.</li> </ul> <p>(b) The sustainable drainage system shall be implemented in accordance with the approved details before the development is occupied/brought into use, and thereafter managed and maintained in accordance with the approved details.</p> <p>REASON: To ensure a satisfactory means of drainage and to manage risk of flooding and pollution in accordance with policies within the Development Plan, Liverpool Flood Risk Management Strategy and NPPF.</p>
14	<p>The surface water drainage of the site shall be designed to prevent the discharge of water on to the public highway in accordance with a drainage design which shall be submitted to and approved in writing by the local planning authority and completed in accordance with the approved details before the development is occupied/brought into use.</p> <p>REASON: To prevent unnecessary surface water from being deposited on to the highway thus causing a potential source of danger to other road users.</p>
15	<p>(a) Details of the following external works shall be submitted to and approved in writing by the local planning authority before they are implemented:</p> <ul style="list-style-type: none"> <li>(i) Bin storage facilities</li> <li>(ii) All ground surfaces not built upon</li> <li>(iii) All new boundary treatment, gates and means of enclosure</li> <li>(iv) External Lighting</li> </ul> <p>(b) The development shall be carried out in accordance with the approved details before the development is occupied/brought into use.</p> <p>REASON: These details are not included in the application and the Council wishes to ensure that they are satisfactory.</p>
16	<p>a) Prior to their implementation and use on site, samples or specifications of the following materials to be used in the external construction of this development shall be submitted to and approved in writing by the local planning authority.</p> <ul style="list-style-type: none"> <li>(i) External facing materials</li> <li>(ii) Roofing materials</li> </ul>



	<p>(b) The scheme shall be completed using the approved materials before the development is occupied/brought into use.</p> <p>REASON: To ensure a satisfactory external appearance.</p>
17	<p>Prior to their installation, details of the specifications and proposed location of all park furniture including benches, picnic benches, seating, bins, shall be submitted and approved in writing prior to the installation of each phase of the development.</p> <p>REASON: in the interest of amenity and of ensure an adequate provision of accessible furniture is provided.</p>
18	<p>Prior to installation of any street lighting to the park access points or to the park footpaths, details of the location and specification shall be submitted and approved in writing by the Local Planning Authority</p> <p>REASON: In the interest of Pedestrian safety and to comply with accessibility for all standards.</p>
19	<p>Prior to the installation of any associated signage, details of the location and specification shall be submitted and approved in writing by the local planning authority for the avoidance of doubt the main access signage points shall adhere to RNIB best practice recommends installing 'Maps for All' (or similar). These maps provide information in a format suitable for a wide range of users including wheelchair users, visually impaired people, people with learning disabilities, Braille users etc.</p> <p>REASON: In the interest of amenity and to ensure that accessibility for all standards are met.</p>
20	<p>No development shall take place on any phase, including any demolition, site clearance or ground works, until</p> <p>a) An investigation and assessment methodology, including analysis suite and risk assessment methodologies has been submitted to and approved by the LPA in writing, prior to any site investigations</p> <p>b) A site investigation and assessment has been carried out by competent persons to determine the status of contamination including chemical, radiochemical, flammable or toxic gas, asbestos, biological and physical hazards at the site and submitted to the LPA.. The investigations and assessments shall accord with current Government and Environment Agency recommendations and guidance and identify the nature and extent of any contaminants present, whether or not they originate on the site, their potential for migration and risks associated with them. The assessment shall consider the potential risks to</p> <p>(i) human health,</p> <p>(ii) controlled waters,</p> <p>(iii) property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes,</p> <p>(iv) adjoining land,</p>

	<p>(v) ecological systems (vi) archaeological sites and ancient monuments.</p> <p>c) A detailed remediation scheme (if required), has been submitted to and agreed in writing with the LPA. This scheme shall include an appraisal of remedial options, implementation timetable, works schedule, site management objectives, monitoring proposals and remediation validation methodology. The scheme once completed must ensure that the site will not qualify as contaminated land under Part IIA of the Environmental Protection Act 1990 in relation to its intended use.</p> <p>REASON: These details are needed prior to the commencement of development in order to ensure that risks from land contamination to future users of the land and neighbouring land are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.</p>
21	<p>After development commences and prior to first occupation;</p> <p>a) Following completion of the measures identified in the approved remediation scheme and prior to occupation of any part of the development, a verification report which shall confirm the adequacy of remediation must be prepared and submitted to and approved in writing by the local planning authority before this condition will be discharged.</p> <p>If a phased approach to the development is being proposed, then a validation/completion report for an agreed number of plots within each of the proposed phases shall be submitted to the local planning authority and approved in writing before the condition relating to the phase in question shall be discharged.</p> <p>b) If any potentially contaminated (unusual/suspect) material or flammable/toxic gas not previously identified is discovered, this must be reported in writing to the local planning authority and a further assessment and a revised remediation scheme will be required by the local planning authority . If no contamination is found then this should be detailed in the remediation verification report.</p> <p>REASON: To ensure that risks from land contamination to future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.</p>
22	<p>Prior to installation of any gym equipment, details of the location and specification shall be submitted and approved in writing by the local Palnning Authority:</p> <p>Reason: In the interest of pedestrain safety and general amenity.</p>
23	<p>All external lighting fittings shall be orientated so that any measurements taken at any nearby habitable roomed windows do not exceed 6 lux.</p> <p>REASON: It is in the interests of the amenity of residents in the vicinity of the application site.</p>
24	<p>The surface water drainage of the site shall be designed to prevent the discharge of water on to the public highway in accordance with a drainage design which shall be</p>

	<p>submitted to and approved in writing by the local planning authority and completed in accordance with the approved details before the development is occupied/brought into use.</p> <p>Reason: To prevent unnecessary surface water from being deposited on to the highway thus causing a potential source of danger to other road users.</p>
25	<p>No part of the development shall be occupied or brought into use until the areas indicated on the submitted plans to be set aside for parking and servicing have been surfaced, drained and permanently marked out or demarcated in accordance with the details and specifications shown in drawing number [..(i)..]. The parking and servicing areas shall be retained as such thereafter.</p> <p>REASON: To ensure that adequate provision is made on the site for the traffic generated by the development, including allowance for safe circulation, manoeuvring, loading and unloading of vehicles as well as parking, and that hard-surfaced areas have a satisfactory appearance.</p>
26	<p>(a). No works shall take place, including any demolition, site clearance or ground works, until a Construction Method Statement comprehensively detailing the phasing and logistics of demolition/construction has been submitted to and approved in writing by the local planning authority.</p> <p style="text-align: center;">The method statement shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(i) Construction traffic routes, including provision for access to the site</li> <li>(ii) Entrance/exit from the site for visitors/contractors/deliveries</li> <li>(iii) Location of directional signage within the site</li> <li>(iv) Siting of temporary containers</li> <li>(v) Parking for contractors, site operatives and visitors</li> <li>(vi) Identification of working space and extent of areas to be temporarily enclosed and secured during each phase of demolition/construction</li> <li>(vii) Temporary roads/areas of hard standing</li> <li>(viii) Schedule for large vehicles delivering/exporting materials to and from site</li> <li>(ix) Storage of materials and large/heavy vehicles/machinery on site</li> <li>(x) Measures to control noise and dust</li> <li>(xi) Details of street sweeping/street cleansing/wheelwash facilities</li> <li>(xii) Details for the recycling/disposing of waste resulting from demolition and construction works</li> <li>(xiii) Hours of working</li> <li>(xiv) Phasing of works including start/finish dates</li> </ul> <p>(b). The approved Construction Method Statement shall be adhered to throughout the construction period for the development.</p> <p>REASON: These details are needed prior to the commencement of development in order to ensure that adequate on-site provision is made for construction traffic, including allowance for the safe circulation, manoeuvring, loading and unloading of vehicles, as well as parking, and to reduce impact on residential amenity and the general amenity of surrounding occupiers during construction.</p>

27	<p>The internal connecting footpaths/footways through the site and the pedestrian access points which lead to Springfield Park are required to be open and accessible at all times to the general public in perpetuity.</p> <p>Reason: To allow the public open space within the site to be fully accessible and open without any restrictions to access.</p>
28	<p>No part of the development shall be occupied or brought into use until the areas indicated on the submitted plans to be set aside for parking have been surfaced, drained and permanently marked out or demarcated in accordance with the details and specifications. The parking and servicing areas shall be retained as such thereafter.</p> <p>Reason: To ensure that adequate provision is made on the site for the traffic generated by the development, including allowance for safe circulation, manoeuvring, loading and unloading of vehicles as well as parking, and that hard-surfaced areas have a satisfactory appearance.</p>
29	<p>No part of the development shall be occupied or brought into use until the areas indicated on the submitted plans to be set aside for cycle parking have been provided in accordance with the details and specifications shown in drawing number [..(i)..]. The cycle parking shall be retained as such thereafter.</p> <p>REASON: To ensure that adequate provision is made for parking cycles on the site; and to establish measures to encourage non-car modes of transport.</p>

## **INFORMATIVES**

The applicant is advised that the scheme should comply with the relevant industry Technical Guidance, including guidance published by Sport England, National Governing Bodies for Sport. Particular attention is drawn to 'Natural Turf for Sport', (Sport England, 2011)

The applicant is reminded that it is an offence to allow material to be carried from the site and deposited on or cause damage to the highway from uncleaned wheels or badly loaded vehicles. The Highway Authority will seek to recover any expenses incurred in clearing, cleaning or repairing highway surfaces and will prosecute persistent offenders under Sections 131, 148 & 149 of the Highways Act 1980.

Any landscaping within the site is to be positioned and maintained such that it does not encroach on or over the adjacent highway.

Prior to commencement of development a joint inspection between the applicant and the Highway Authority of the condition of the existing footways/carriageways within the vicinity of the site should be carried out. The applicant is advised to contact Council's Highway Development Control Team on email [HDC@liverpool.gov.uk](mailto:HDC@liverpool.gov.uk) for further details.

The grant of planning permission shall not be construed as authority to erect scaffolding, hoarding or any other device or apparatus for which a licence must be sought from the Highway Authority. The applicant is advised to contact the Council's Highway Development Control Team by email: [lcchighwayskipsscaffold@liverpool.gov.uk](mailto:lcchighwayskipsscaffold@liverpool.gov.uk) for further advice. It should be noted that there is a fee associated with this process.

During the site works the contractor shall pay full regard to the best practicable means available in respect of the control of noise and dust from the site. In addition, no operations which are audible at the site boundary shall be carried out:

- (i) outside the hours of 0800 to 1800 weekdays
- (ii) outside the hours of 0800 to 1300 Saturdays, and
- (iii) at any time on Sundays or Bank Holidays.

The applicant is reminded that it is an offence to allow material to be carried from the site and deposited on or cause damage to the highway from uncleaned wheels or badly loaded vehicles. The Highway Authority will seek to recover any expenses incurred in clearing, cleaning or repairing highway surfaces and will prosecute persistent offenders under Sections 131, 148 & 149 of the Highways Act 1980.

It is an offence to erect a sign on the public highway without permission of the Highway Authority. The grant of planning permission does not entitle a developer to erect any form of signage (directional, advertisement or otherwise) on the highway and consent is required from the Highway Authority. The applicant is advised to contact the Council's Highway Development Control Team by email: [HDC@liverpool.gov.uk](mailto:HDC@liverpool.gov.uk) for further advice.

The City Council expects strict compliance with all planning conditions and requests that particular attention is drawn to conditions that are required to be formally discharged by way of an application. Adequate information to discharge pre-commencement planning conditions should be submitted to, and approved in writing by the local planning authority before any works start on site. Failure to discharge conditions before commencing development could result in the development being unlawful or enforcement action being taken. A fee is payable for each application made to discharge planning conditions.



## **NOTES FOR PLANNING DECISION NOTICES**

### **OTHER CONSENTS**

This permission refers only to that required under the Town and Country Planning Acts and does not include any consent or approval under any other enactment, byelaw, order or regulation. In particular, if building alterations are involved these may also require consent under the Building Regulations and before commencing work this aspect should be discussed with Building Control (Email: [building.control@liverpool.gov.uk](mailto:building.control@liverpool.gov.uk) Tel: 0151 233 4458/ 4467). Where a building regulations approval is obtained and this requires changes from your planning permission, revised drawings must be submitted to the Divisional Manager Planning.

### **COMPLIANCE WITH THE PERMISSION/CONSENT**

It is important that this permission/consent is implemented strictly in accordance with the plans approved by the consent. Where a planning permission is granted subject to conditions it is important that these are fully complied with. Non-compliance with the conditions of the permission/consent may well result in a Breach of Condition Notice being served on you or any other appropriate enforcement action required to remedy the breach of planning control.

### **APPEALS TO THE PLANNING INSPECTORATE**

If you are aggrieved by the decision of the city council as local planning authority then you can appeal to the Planning Inspectorate. *Please note, only the applicant possesses the right of appeal.*

If you want to appeal, then you must do so within **six months** of the date of issue of this notice.

The Planning Inspectorate have introduced an online appeals service which you can use to make your appeal online [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate). The Inspectorate will publish details of your appeal on the internet (on the Appeals area of the Planning Portal). This may include a copy of the original planning application form and relevant supporting documents supplied to the local authority by you or your agent, together with the completed appeal form and information you submit to the Planning Inspectorate. Please ensure that you only provide information, including personal information belonging to you that you are happy will be made available to others in this way. If you supply personal information belonging to a third party please ensure you have their permission to do so. More detailed information about data protection and privacy matters is available on the Planning Portal.

If you do not have access to this service, forms can be obtained from Initial Appeals, The Planning Inspectorate, Temple Quay House, 2 The Square, Temple Quay Bristol, BS1 6PN. (Tel: 0303 444 5334 or e-mail: [enquiries@pins.gsi.gov.uk](mailto:enquiries@pins.gsi.gov.uk)). *You must use a Planning Appeal Form when making your appeal. If requesting forms from the Planning Inspectorate, please state the appeal form you require.*

### **PURCHASE NOTICES**

If the local planning authority or the Office of the Deputy Prime Minister refuses to grant permission to develop land or grants it subject to conditions, the owner may claim in certain circumstances that the land has become incapable of development. In these circumstances, the owner may serve a Purchase Notice on the Council under Part VI of the Town and Country Planning Act 1990, requiring the Council to purchase the owners interest in the land.

### **COMPENSATION**

In certain limited circumstances, a claim must be made against the local planning authority for compensation. The circumstances in which compensation is payable are set out in Parts VI and V of the Town and Country Planning Act 1990.

### **NEW RESIDENTIAL DEVELOPMENT**

In order to ensure that minimum disruption occurs once a development is completed; developers are asked to contact all the public utilities to ensure that adequate services are provided at the outset. In particular developers are asked to contact the Cable TV provider

### **PUBLIC NOTICE – PARTY WALL ETC. ACT 1996**

From the 1 July 1997 any person intending to carry out works affecting party walls or involving excavations for foundations adjacent to a party wall will be required to serve notice on all adjoining owners before work commences. You are advised to engage the services of a private surveyor to act on your behalf in any formal private procedures and agreements that you are now required, by The Party Wall etc. Act 1996, to enter into.  
Failure to comply with the Act may result in civil action being taken against you.

# **ALDER HEY CHILDRENS HEALTH PARK PROJECT**

## **GENERAL SPECIFICATION FOR SPRINGFIELD PARK**

### **1. Introduction**

The delivery of the Trust's Children's Health Park Project and ultimately the re-development of Alder Hey shall require the reconfiguration of the existing Springfield Park and laying out of a new neighbourhood park on a site area that shall include equivalent areas of the land to be exchanged between the Trust and Liverpool City Council. The total site area of the new neighbourhood park shall be equivalent in size to the total site area of the existing Springfield Park. The vision, shared by the Trust and Liverpool City Council, is for a new neighbourhood park, delivered as a fresh, modern and unified public resource with paving forms and surfaces flowing seamlessly whilst incorporating existing trees and exciting features together with the relocated Nelson obelisk.

It is accepted by both parties that the final design solution and layout of Springfield Park cannot be currently determined. This General Specification for Springfield Park is intended to specify the general minimum standards to be delivered in the park.

### **2. Existing Trees**

All work involving existing trees shall be informed by a full survey in accordance with BS5837 (2005). All proposals for tree removal, tree surgery and tree protection shall follow the associated recommendations entitled "*Trees in Relation to Construction*" and be carried out to the satisfaction of the Parks and Greenspaces Business Unit of Liverpool City Council.

### **3. Footpath Network**

A network of tarmac footpaths with concrete edgings shall form part of the design solution. The footpath network shall, where appropriate, either establish new or incorporate existing routes in providing a link to various park uses but also in linking the neighbourhood communities which surround the hospital and park sites thus supporting the creation of the new park as a valuable community resource. Where existing paths are retained, these should be resurfaced as necessary to match new paths so ensuring that the restored park represents uniformed quality. The main footpath circuit shall be not less than 3 metres wide and the remaining paths must allow for passing wheelchairs. All paths are to be constructed to vehicular standards so accommodating maintenance vehicles. 150x50mm precast concrete edgings with in-situ concrete haunching shall be used and the paving will comprise 200mm granular bed with 60mm 0/20 DBM open-graded binder course and 20mm 0/20 DBM surface course. Natural stone paving, laid to highlight entrances and feature areas, must also be able to support vehicular traffic.

#### **4. Soft Landscaping**

Soft landscaping shall be carried out to a high standard in accordance with BS4428 the code of practice for general landscaping operations. Imported topsoil will be to BS3882 and nursery stock (trees and shrubs) to BS3936. Semi-mature trees must comply with BS4043 and turf BS3969. Wildflower seed may be sourced from the National Wildflower Centre or other suppliers.

Allowance should be made for the importation of fit for purpose subsoil, in accordance with the contaminated land risk assessment for Site B, where the existing in-situ material is found to be unsuitable.

Topsoil shall be a minimum depth of 450mm to shrub beds and 150mm to grass areas, although it is agreed by both parties that topsoiling shall only be a requirement for the replacement park area and not a specific requirement of the retained park area.

Tree pits must be of a sufficient size to allow the trees to grow and not become "pot bound" or they will remain vulnerable to vandalism. In hard standing areas a typical individual tree pit has to be a minimum 3m x 3m area and up to 1m deep or for a continuous planting trench it may be reduced to 2 metres width. The depth can vary depending on soil conditions, drainage etc. but the tree soil must be a minimum of 7 cubic metres per tree. A 1m<sup>3</sup> pit for up to extra heavy standard trees in soft areas is acceptable as long as the surrounding area has reasonable topsoil cover and growing conditions.

The method of support needs to be determined by the site and the size of tree being planted. Underground guying is generally the preferred method for large semi-mature trees in pedestrianised areas whereas tree staking for extra heavy standards in verges and soft surfaces is more appropriate. Over-ground guying is not acceptable. Each method of staking will be dictated by the size of the tree and the site requirements.

The soft landscaping (including any replacement planting due to latent defects) must be carried out during the planting season.

The works shall comply with the following (as amended):

- BS 3936: Specification for nursery stock
  - Part 1 Trees and shrubs (1992)
  - Part 2 Roses (1990)
  - Part 4 Forest trees (1984)
  - Part 5 Poplars and willows (1985)
  - Part 9 Bulbs, corms and tubers (1998)
  - Part 10 Groundcover plants (1989)

BS 3882: 1994 Specification for topsoil

- BS 3969: 1998 Turf for general landscape purposes
  - Part 4 Plant description (1966)
  - Part 5 Horticultural, arboricultural and forestry practice (1969)
- BS 3975: Glossary for landscape work
- BS 3998: 1989 Recommendations for tree work
- BS 4043: 1989 Transplanting semi-mature trees
- BS 4428: 1989 Code of practice for general landscape operations
- BS 5837: 1991 Guide for trees in relation to construction
- BS 5837: 2005 Trees in relation to construction — Recommendations
- BS 7370: 1991 Grounds maintenance

#### **5. Sports Provision**

Two (2) senior reserve standard grass football pitches are to be provided in the new park. Full details shall be agreed with Liverpool City Council's (Development Manager for Sport and Recreation) and will include a piped drainage system comprising laterals and mains with silt traps with backfill of clean, hard stone and precast concrete inspection chambers plus soakaway(s) as required.

The perforated drain pipes, purpose made junctions and connectors shall be of an approved make and conform to BS 4962: 1982. 80mm Laterals at 5m centres shall be linked to 160mm mains using 67.5 degree Multi-Junctions as WavinCoil. Trenches for mains shall be 200mm wide with 600mm minimum cover and trenches for laterals shall be 150mm wide with 450mm minimum cover.

Premium grade topsoil to BS3882 (1994) shall be 150mm minimum depth and used together with approved seed mixture, fertiliser and topdressing sand. Allow for additional approved sand/topsoil topdressing for levels regulation. Supply and fix proprietary goal sockets and supply goal posts to suit.

A new tarmac Multi-Use Games Area (MUGA) is also to be provided to EN 15312 (2007) incorporating perimeter fencing, multi-sport goal ends and line marking as Montana from SMP Arena range or equal and approved. 150x50mm precast concrete edgings with in-situ concrete haunching shall be used and the paving will comprise 200mm granular bed with 60mm 0/20 DBM open-graded binder course and 20mm 0/20 DBM surface course.

## **6. Active Recreation**

Play facilities in the new play areas shall use durable equipment and street furniture and have a steel fence around infant areas, e.g. 1.4m bow-topped galvanised steel railing with two self-closing steel gates. A durable impact-absorbent surface shall be laid where necessary. Other more natural materials can be used to form older children's play facilities. All must conform to RoSPA guidelines and be fully inclusive and accessible, encouraging use by all. Typical layouts may include:

### Infant areas:

Small multi-activity unit with slide, infant swing (4 seats), inclusive swing (2 seats), inclusive roundabout, seesaw, rocking items (up to 3 including sit-in models), play panels/interactive units

### Junior areas:

Swing (flat seats x 4), swing (cantilever-basket/tyre), free-standing slide, large multi activity/climbing unit, rocking item (e.g. rocking horse), seesaw (e.g. Gyrospiral), roundabout/rotational item (e.g. overhead spinner), aerial slide, climbing boulder(s).

Colourful and textural equipment will be used, especially in infant/junior areas, including a blend of both traditional play equipment such as swings, and slides, along with more contemporary and challenging equipment for older children (8-13 yr olds) to provide a diverse play experience. Natural elements should also be included to enhance the design and increase play value, whilst also complimenting the immediate surroundings of the play areas. The design should include the provision of seating in and around each of the play areas. A site signboard should also be provided by each play area entrance, detailing the site's specification.

The park is also to be furnished with fitness equipment and a trim trail. A teen shelter and a yoga shelter will also be installed.

## **7. Features**

The design and quality of special features within the new park will be vital to its success. These will include links, public art, park entrances and relocation/conservation of the Nelson obelisk. Detailed drawings and specifications in this respect shall be agreed with the Liverpool City Council's Parks and Greenspaces Business Unit Manager as part of the planning application and Landscape and Environmental Management Plan and in accordance with the Land Transfer Agreement.

Any swales, ponds, lakes, wetlands or other water features will be contained within the hospital site and will be managed and maintained by the Trust.



Any helipad facility must not be located within the area of the Park controlled by Liverpool City Council.

### **8. Site Furniture**

New site furniture, to be agreed with the Liverpool City Council's Parks and Greenspaces Business Unit Manager, is to be provided throughout the reconfigured public open space including:

- Seating 24no Broxap ref BX2060 (anti-vandal steel slats) set in concrete.
- Picnic tables 8no Broxap ref BX17 4016-1 set in 3 x 3m concrete apron.
- Litter bins 12no Broxap ref BX45 2550-S set in concrete foundation.
- Dog bins 12no Broxap ref BX45 2591-PM set in concrete foundation.
- Welcome signs - 4no 1518 x 1917mm cast aluminium sign with raised text supported on tapered cast iron bollards with decorative rings and special finial.
- Information display cabinets – 4no 1518 x 1917mm cast aluminium cabinet with lockable doors (incorporating vandal-resistant transparent panels) supported on tapered cast iron bollards with decorative rings and special finial.
- Details of layout, artwork and information included on signage and interpretation panels to be subject of detailed discussion and agreement between the parties.
- Finger posts – 10no 2500mm high tapered cast iron column with decorative rings and special finial. Cast aluminium fingers with raised lettering.
- Interpretation lectern – 3no (Nelson Memorial, former Loop line and former hospital site) 594 x 420mm cast aluminium panel 1000mm high tapered cast iron column with decorative rings plus colourfast GRP graphic panel.
- Railings – ornamental internal and feature railings as TR300 2000mm high from TangoRail (0844-836-0008) or equal and approved. New boundary railings and plinth to match existing boundary. Existing railings, etc to be replaced or repaired as required.
- Access gates (including provision for park maintenance vehicles) to match railings as described above. Pedestrian safety barriers to be provided adjacent to highways and internal roads.

### **10. Car Parking**

Adequate car parking spaces shall be constructed to serve the new park which will be surfaced in tarmac and contained by concrete kerbs with a positive drainage system to adoptable standards. Thermo-plastic road markings and highway signage will be provided. The boundary between the car parking area and the park will be cast iron single rail and post fencing Broxap ref BX 1689-RT 450mm high.

### **11. Site Drainage**

A land drainage system comprising laterals and mains with backfill of clean, hard stone shall be provided throughout the park including silt traps and inspection chambers plus soakaway(s)/filtration trenches as required, although it is agreed by both parties that any land drainage shall only be a requirement for the replacement park area and not a specific requirement of the retained park area.

## **12. Lighting**

It has been agreed between the parties that the provision of lighting within Springfield Park is not currently required by the City Council or has been budgeted for as part of the Park Works. Should at a later date lighting provision be required by the City Council, the parties shall mutually agree all standards, specification, financing and works arrangements.

## **13. Maintenance and Rectification Period**

The Trust shall provide a contractual maintenance and rectification period ("Rectification Period") in accordance with the obligations of the Land Exchange Agreement and the approved landscape environmental management plan". For the avoidance of doubt, Liverpool City Council shall continue to remain responsible for the management of Springfield Park.

Following completion of the Park Works, the Trust shall be responsible for the management and maintenance of all boundaries between Springfield Park and Alder Hey Children's NHS Foundation Trust. For the avoidance of doubt, Liverpool City Council shall remain responsible for the management of all other boundaries.

Following expiry of the contractual maintenance and rectification period Liverpool City Council shall be responsible for the management and maintenance of all landscaped elements and structures within its land and all other boundaries.

Liverpool City Council shall adopt the park on completion of the Park Works.

Liverpool City Council shall procure the relevant public liability insurances for all areas of land within its ownership irrespective of whether the land is subject to the maintenance and rectification period ("Rectification Period").

Liverpool City Council shall procure the relevant public liability insurances and continue to assume full management responsibility for all areas of land which remain accessible to the public throughout the park works.

## **14. Interim Arrangements for Existing Park**

Before work commences on the eastern side of the existing park suitable arrangements must be put in place from a grounds maintenance perspective. A secure north-south boundary shall be constructed with gate control being a major priority. Adequate provision for maintenance vehicles, footpaths, etc must be

made by the introduction of new access points at agreed locations around the boundary of the temporarily-reduced park site. Additional paving works will also be needed to link these access points to the existing pathways.

Health & Safety matters will be of vital importance and associated factors such as temporary signage must be addressed. It is essential that the available public open space continues to function at a high level throughout the interim period. Of particular note will be the relocation of the Nelson Memorial.