

HILTON LANE (BUTTERSTILE CLOSE) PRESTWICH

SITE COMPLETION REPORT

Job Number: LKC 21 1545
Date: March 2024
Client: SOC Construction Ltd



INCREASING LAND VALUE

LK
GROUP

LK Consult			
Document Verification			
Site Address	Hilton Lane (Butterstile Close), Prestwich		
Report Title	Site Completion Report		
Job Number	LKC 21 1545	Document Ref.	CL-602-LKC 21 1545-03
Date Issued	18 th March 2024	Report Version	R0
Prepared By	Paul Quimby	Reviewed By	Rachel Peart

Revision Record			
Revision No.	Date	Nature of Revision	Approved By

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1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by SOC Construction Ltd to provide a Site Completion Report for land off Hilton Lane (Butterstile Close), Prestwich (planning reference 67816).

The site is approximately 0.2ha and centred around NGR 380930N 402410E (Figure 1). The development comprised the construction of 8no. residential houses and gardens and soft landscaping (Figure 2). It is understood many of the properties were to be hardstood with permeable paving.

The aim of the Site Completion Report will be to demonstrate to Local Authority that the site has been suitably remediated in line with the Remediation Statement and in accordance with the National Planning Policy Framework (NPPF)¹, where the site is “suitable for use” for the proposed development.

The Site Completion Report should be sufficient to satisfy the relevant contaminated land conditions. Details are provided in the following Sections.

1.2 Summary of Required Validation Work

The following reports have been undertaken for the site:

- Vapour Assessment, undertaken by LKC (Ref: Vapour Assessment, dated March 2023).
- Supplementary Ground Investigation, undertaken by LKC (Ref: LKC 21 1545-03, dated January 2023).
- Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy report, undertaken by LKC (Ref: LKC 21 1545-02R1, dated 24th May 2022).
- Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: CL-602-LKC 21 1545-01, dated October 2021). This report included a summary of a Phase 1 Desk Study Investigation Report undertaken by Geo-investigate Ltd in 2017.

Based upon the findings of the above the following validation was required:

- Validation of precautionary gas protection (CS2 / Amber 1) measures for Plots 1-5.
- Verification testing of all imported soil for gardens / soft landscaping areas.
- Environmental capping layer: Validation of environmental cover system depth (600mm clean soil over geotextile membrane in gardens and 450mm in any soft landscaping).
- Provision of waste transfer documents.
- Details of any unexpected contamination identified onsite, suitably risk assessed and / or validated.

2 Gas Protection

Precautionary gas protection required at the site commensurate with Characteristic Situation (CS) 2 / NHBC Traffic Light Amber 1 and comprised the following:

- Ventilation of confined spaces within the building.
- Well-constructed reinforced ground slab.
- Low permeability gas membrane (Visqueen Gas Barrier).

¹ DCL (2021). “National Planning Policy Framework.” Department of Communities and Local Government.

- Minimum penetration of ground slab by services.
- All joints and penetrations to be sealed.
- Passively vented sub-floor void.

Details of gas protection (membrane and foundation schematic) were provided to LKC and presented within R1 of the Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy report.

Inspection of the gas protection was undertaken by others (Assent Building Control acting on behalf of Advantage warranty provider) and email is presented in Appendix A. It is understood that all 8no. plots were installed with gas protection as a precaution. Example photos presented by the client are presented in Appendix A.

From the photographs LKC consider the membranes to have been installed to a high level.

3 Capping Layer Material Validation

3.1 Validation of Imported Topsoil and Subsoil

3.1.1 Sampling Methodology

Topsoil and subsoil was purchased and imported from Drapers, Bickerstaff, Lancashire. Quarried limestone and grit sand was purchased from dhi Ltd.

A total of 56m³ and 69m³ of topsoil and subsoil respectively was imported to site. Based upon the required sampling frequency (1 per 50m³, minimum 3no. per source) a total of 3no. topsoil (ref: TS101-TS103) and 3no. subsoil (ref: SS101-SS103) required testing.

Composite soil samples were taken from in-situ soil within plots and landscaped areas (see Figure 3). Approximately 1kg were recovered in amber jars, amber vials for volatile analysis and plastic tubs. All the samples were labelled and stored in cool boxes prior to being collected by courier at the end of the day for delivery to the DETS in Kent. If collection was not possible the same day then samples were stored in the sample storage fridge at the LK Group offices below 4°C. Samples were tracked using appropriate Chain of Custody forms provided by DETS. All followed standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation².

As a precaution the following were analysed:

- Arsenic, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate and boron, pH, USEPA PAH 16, TPHCWG, BTEX, MTBE, phenols, cyanide suite, organic matter and asbestos identification.

All soil laboratory certificates of analysis are presented in Appendix B. Invoices relating to quarried material is presented in Appendix B.

3.1.2 Soil Assessment Criteria

Results of the imported soil testing were screened against conservative assessment criteria for a 'residential with plant uptake' end use.

With regards to the soil risk assessment LKC will use the following hierarchy:

² EA (2000). "Technical Aspects Of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.

- Category 4 Screening Levels (C4SLs)^{3,4}.
- LQM Suitable 4 Use Levels (S4ULs)⁵.

A summary of the generic assessment criteria is provided in Appendix C.

3.1.3 Human Health Risk Assessment - Soil

When compared to the Generic Assessment Criteria (Appendix C) no soil results were exceeded.

LKC considers imported soil (topsoil and subsoil) is deemed 'suitable for use' with regards to the risk to human health.

4 Capping Layer Depth in Soft Landscaping Areas

Only House No. 7 and 8 had gardens comprising soils. The other Plots were hardstood (paving over quarried gritstone and quarried limestone) due to a retaining wall concrete foundations extending into the rear gardens of Plots 1-6 and the requirement to provide permeable drainage. There were also small areas of soft landscaping on site.

A required cover depth of 600mm 'clean soil' (topsoil and subsoil) over a geotextile membrane (separation layer) was required in garden areas. A 450mm 'clean soil' (with geotextile separation layer) was required in soft landscape areas.

LKC attended site on 5th March 2024 to inspect the capping layer construction and depth in relevant plots and landscaped area. Photographs are provided in Appendix D and the observations are summarised in the table below.

Location	Geo-textile Membrane Y/N	Topsoil Depth (mm)	Subsoil Depth (mm)	Total Depth (mm)	Required Depth (mm)	Pass (✓) or Fail (x)
Plot 1 Front	Fully hardstood					✓
Plot 1 Rear	Fully hardstood					✓
Plot 2 Front	Fully hardstood					✓
Plot 2 Rear	Fully hardstood					✓
Plot 3 Front	Fully hardstood					✓
Plot 3 Rear	Fully hardstood					✓
Plot 4 Front	Fully hardstood					✓
Plot 4 Rear	Fully hardstood					✓
Plot 5 Front	Fully hardstood					✓
Plot 5 Rear	Fully hardstood					✓
Plot 6 Front	Fully hardstood					✓
Plot 6 Rear	Fully hardstood					✓
Plot 6 Side	Y	600	0	600	600	✓
Plot 7 Front	Fully hardstood					✓
Plot 7 Rear	Y	200	450	650	600	✓
Plot 8 Front	Fully hardstood					✓
Plot 8 Rear	Y	200	400	600	600	✓
Landscaping N	Y	850	0	850	450	✓
Landscaping NE	Y	600	0	600	450	✓
Landscaping N	Y	600	0	600	450	✓

³ Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

⁴ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

⁵ LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

All gardens and landscaped areas had at least the minimal required clean capping depth. All locations inspected had a geo-membrane demarcation layer.

LKC considers this complies with the requirements set out in the remediation strategy.

5 Disposal Tickets

A summary of disposal tickets have been provided to LKC (Appendix D). LKC were informed that a total of c. 950m³ of material was removed offsite to a licenced recycling facility by DHI Excavations Ltd and Farrell Civil Engineer Ltd.

6 Unexpected Contamination

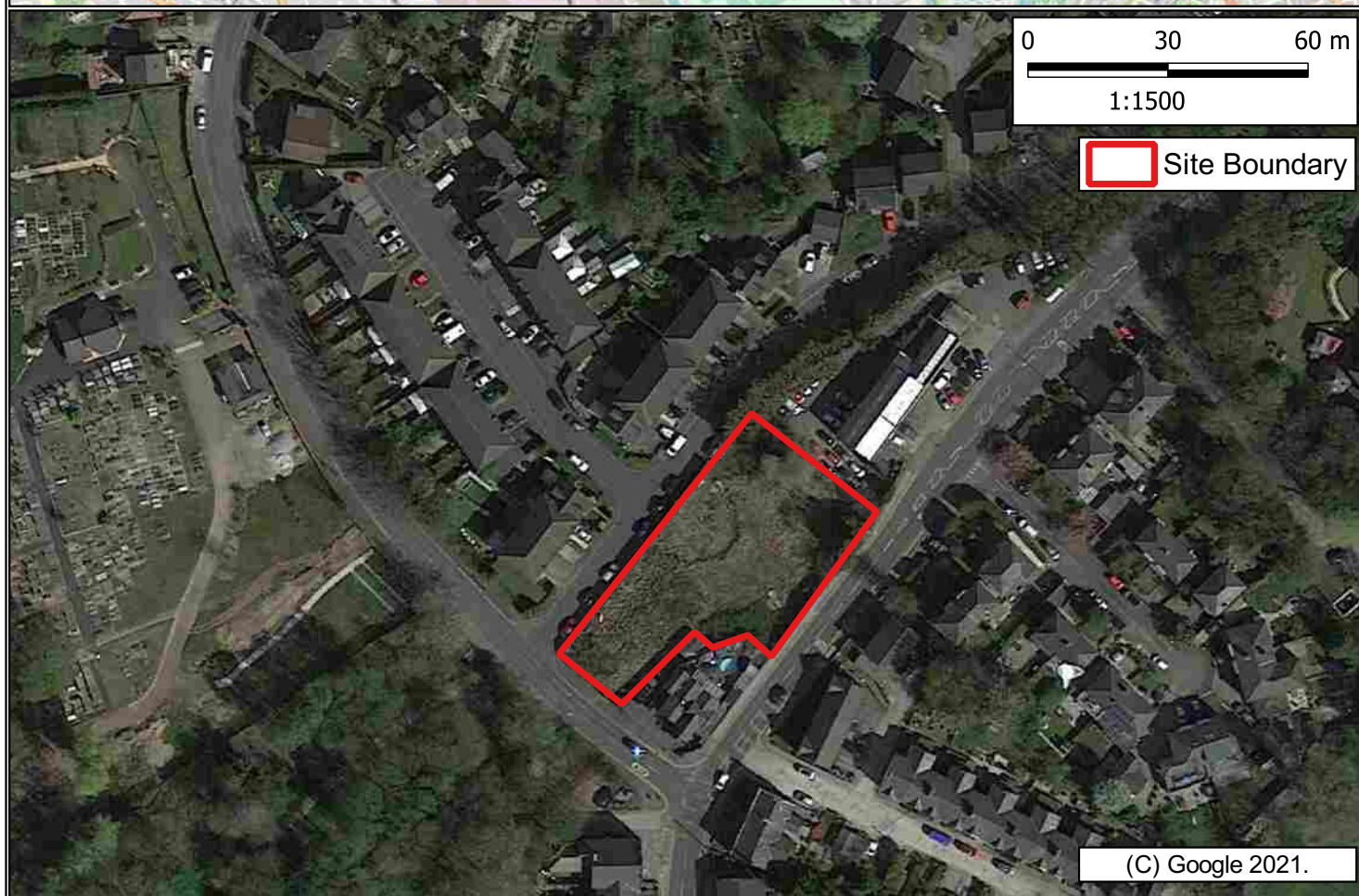
LKC understand from the contractors that no unexpected contamination was encountered during excavation work.

7 Conclusion

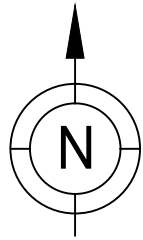
The work onsite has been validated. Based on the above information LKC considers the site is 'suitable for use' for a residential development.

LKC considers there is sufficient information to discharge the outstanding contaminated land planning condition by Bury Council.

FIGURES



Client: Leo Property Ltd				Title: Site Location & Boundary Plan			
Site: Hilton Lane, Butterstile Close, Prestwich				Scale (see scale bar): 1:25,000 & 1:1,500 @ A4			
Job No.: LKC 21 1545	Drawn By: HM	Checked By: PQ	Drawn: Feb 2021	Figure: 1			
				Revision:			



KEY

 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



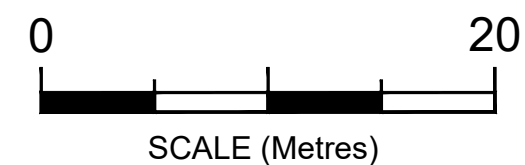
Client: **Leo Property Ltd**

Site: **Hilton Lane, Prestwich**

Title: **Proposed Development Plan**

Job No.: LKC 21 1545	Scale (See Scale Bar): See Scale Bar	Figure: 2	Revision: A
Drawn By: AC	Checked By: LD	Drawn: Mar 2024	

Extract from: Bury Council - Application for Building Numbering (19/04/2023)
Drawing Ref: Final Plot Addresses & Layout With Postcode



APPENDIX A

GAS PROTECTION VALIDATION



INSULATION | INTERIORS | TECHNICAL INSULATION
FIXINGS | CONSTRUCTION ACCESSORIES | COMMERCIAL DRAINAGE

SIGD Manchester
Trafford Point 1
Twining Road
Manchester
Lancashire
M17 1SH

BACS: 56-00-09 29855489
Tel: 0161 836 4400

Pro Forma

Email: leeglindon@sig-ca.co.uk

Document Numb
7187/00003814

Invoice to:-

SIGD North West Cash Account
Trafford Point 1
Twining Road
Manchester
Lancashire
M17 1SH

Deliver to:-

Farrell Civil Eng
Butterstile Close
Off Hilton Lane
Prestwich
M25 9RS

Account	Our Operator	Taxpoint Date	Time	Order Number
9997187	lglindon	16/01/2023	15:45	755830
Your Contact	Your Reference	Date Required	Page	
Nicky Farrell		20/01/2023	1	

Quantity	Product	Price	Total	V
6 RL	VISQUEEN RS074397 Gas Barrier 2m x 50m 10521024	364.95 RL	2189.70*	S
24 RL	VISQUEEN RS000343 Double Sided Jointing Tape 50mm x 10m 10067512	7.55 RL	181.20*	S
28 EA	TIMLOC TH110 Rigid Gas Barrier Top Hat Collar 110mm 10558277 Please note this product is currently out of stock. Current lead time is approx 2-3 working days from date of order	7.30 EA	204.40*	S
28 NO	TIMLOC JCLIP5 Jubilee Clip To Suit TH055 64-114mm Top Hat 10704554 Please note this product is currently out of stock. Current lead time is approx 2-3 working days from date of order	1.51 NO	42.28*	S

Rate	Goods	VAT	Please note this is	Total Goods	2617.58
S 20.00	2617.58	523.52	NOT a VAT invoice	Total VAT	523.52
				Invoice Total	3141.10
				All prices are in Sterling	
GBP Sterling				To be supplied by SIGD Manchester	
SIG standard terms and conditions apply. For full terms and conditions please see our website					
				http://www.sigplc.com/userfiles/file/SIGTradingTermsConditions.pdf	

Paul Quimby

From: Paul Quimby
Sent: 05 March 2024 15:10
To: Paul Quimby
Subject: RE: T278971 - Land off Butterstile Close, Manchester M25 9RS

Begin forwarded message:

From: Kevin Bunsell <kevinbunsell@assentbc.co.uk>
Date: 26 February 2024 at 12:50:59 GMT
To: Anton Lally <ael23@icloud.com>
Subject: T278971 - Land off Butterstile Close, Manchester M25 9RS

Hi Anton

T278971 - Land off Butterstile Close, Manchester M25 9RS

I am pleased to confirm that the Gas Membrane for the plots at the above site were seen during our site inspections.

The standard of installation was good.

No issues were identified.

Kind Regards

Kevin Bunsell DMS MRICS
Chartered Senior Building Control Surveyor

M: 07767 115247

T: 0161 236 7158

Email: kevinbunsell@assentbc.co.uk

Office: Unit 2B/C. Beehive Mill, Jersey St, Manchester, M4 6JG



This transmission is confidential and intended solely for the person to whom it is addressed. If you are not the intended recipient of this transmission, please inform the sender by return.

Assent Building Control Ltd – Registered Office: 4 Navigation Court, Calder Park, Wakefield, West Yorkshire, England, WF2 7BJ Number: 05311596. Registered in England & Wales

Kevin Bunsell DMS MRICS
Chartered Senior Building Control Surveyor

T: 0161 236 7158

M: 07767 115247

Office: Manchester - Unit 2B/C. Beehive Mill, Jersey St, Manchester, M4 6JG

Paul Quimby

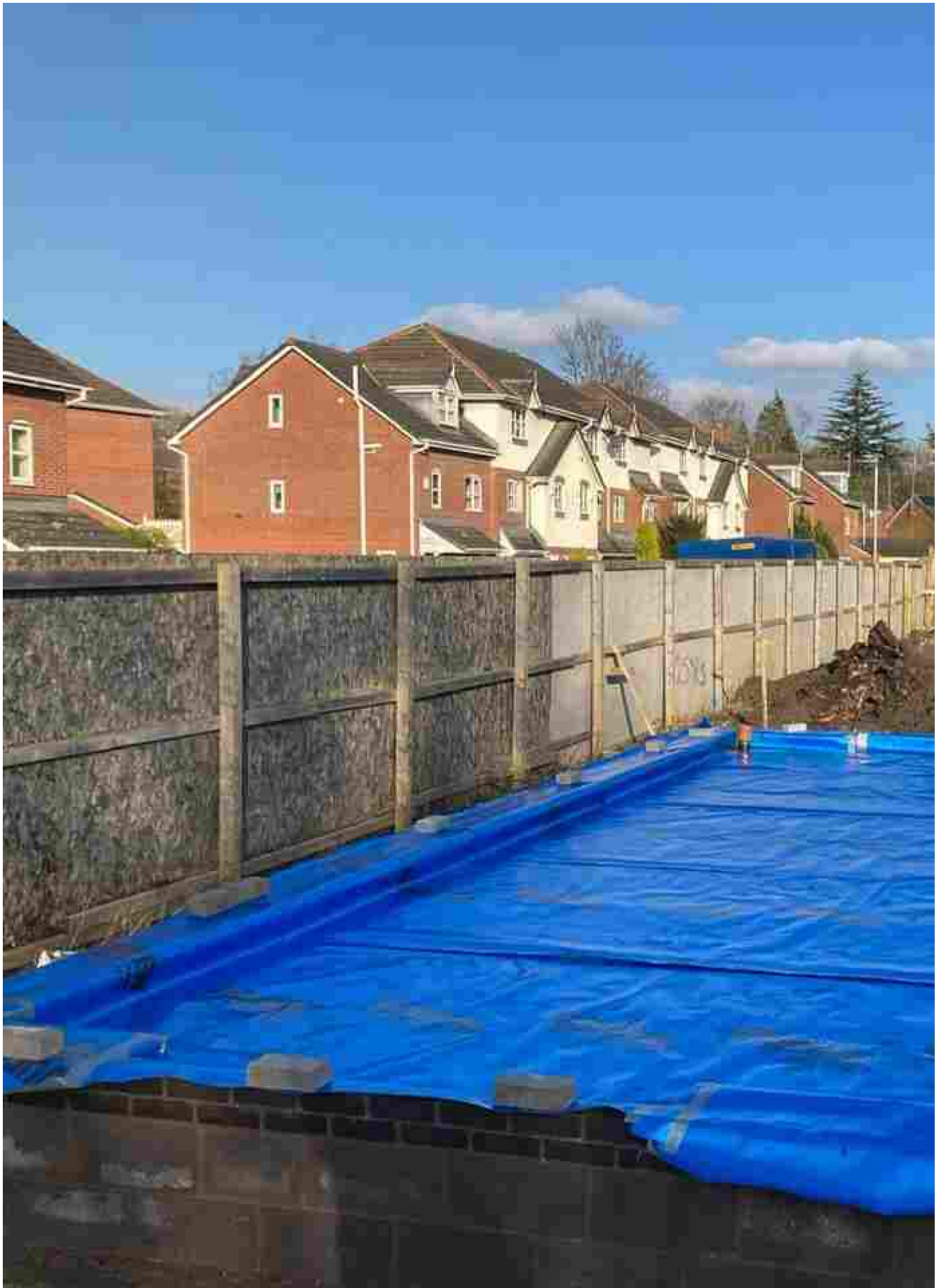
From: Anton Lally <ael23@icloud.com>
Sent: 13 February 2024 18:49
To: Paul Quimby
Subject: Plots 1-8 Badger's Rise, Prestwich

Paul,

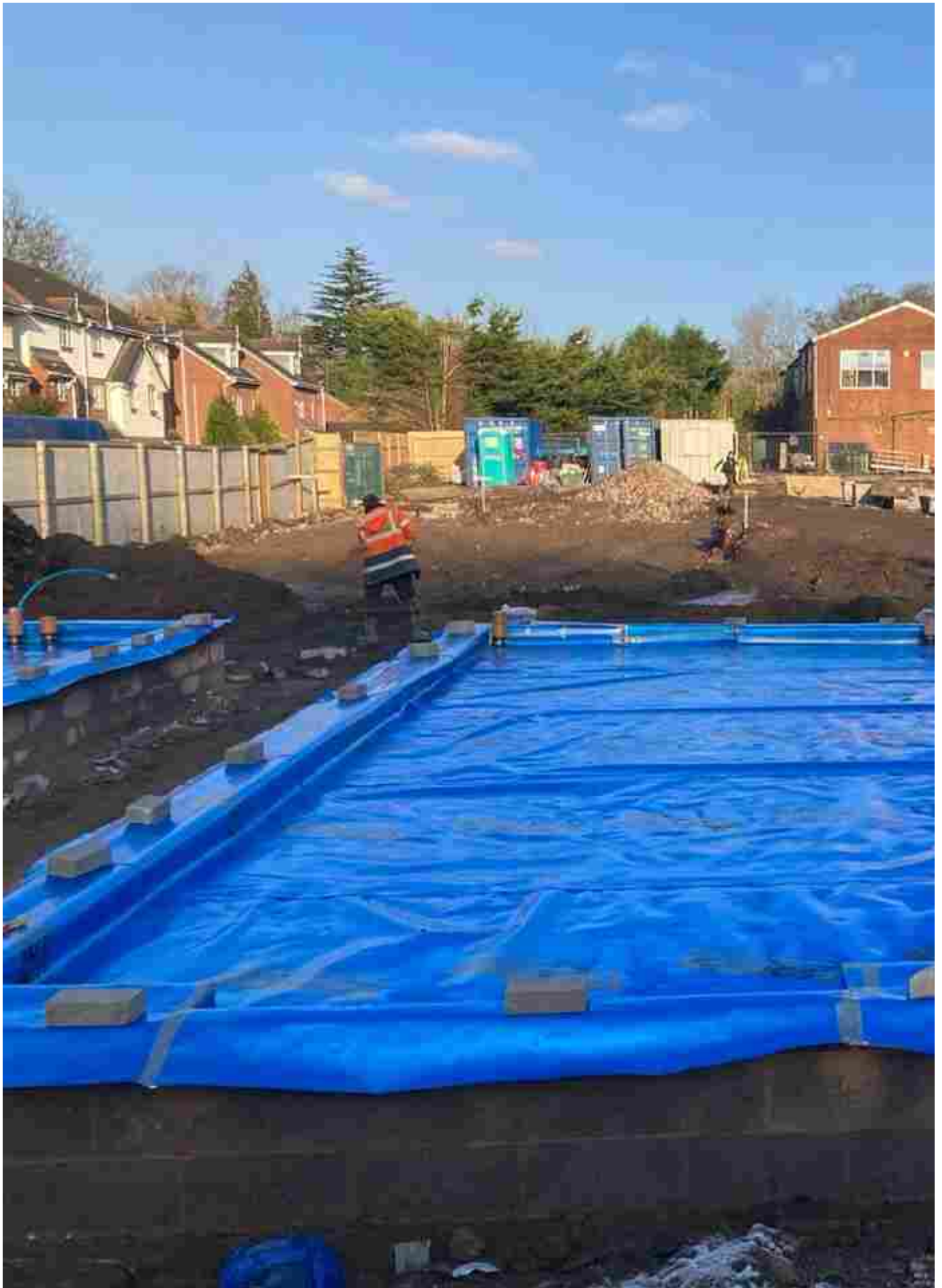
The gas membrane products were installed to every plot.

22 photos attached.

Thanks, Anton





















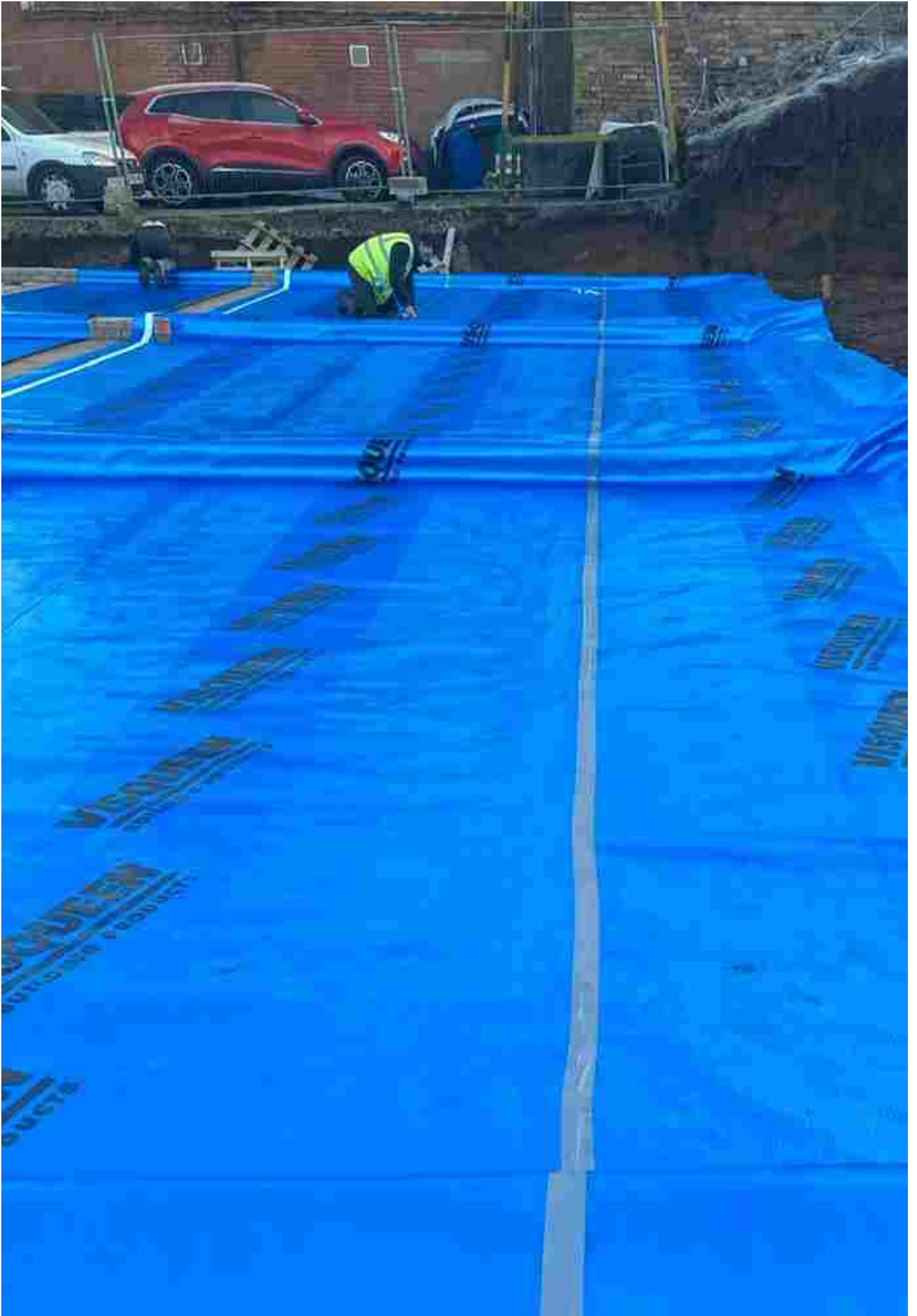








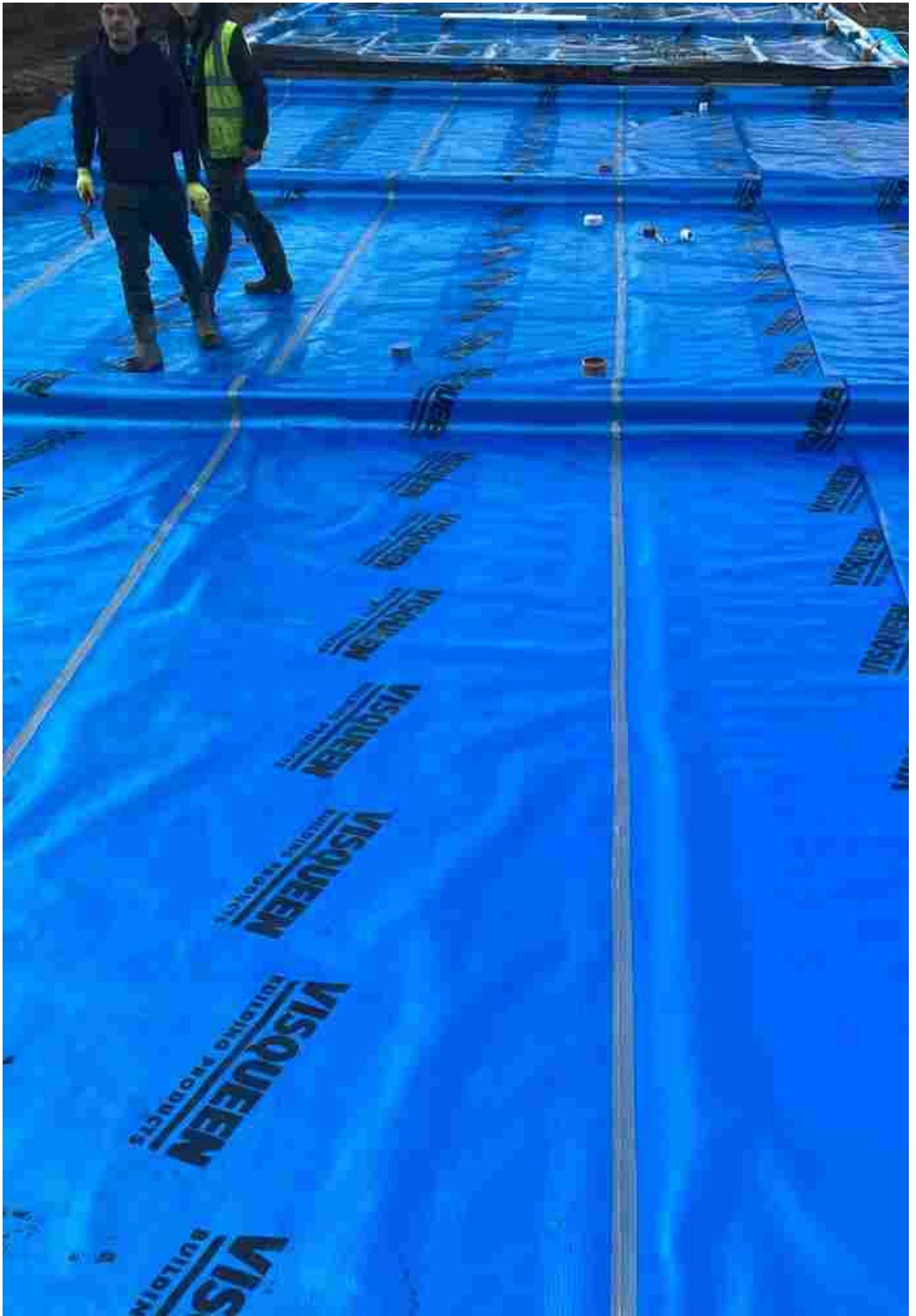
















APPENDIX B

CERTIFICATES OF ANALYSIS – TOPSOIL AND SUBSOIL



Farrell Civil Engineering Ltd
278 Utting Avenue
L4 8ST

Invoice 40159

VAT No: 936082909

Invoice No.	40159
Invoice/Tax Date	18/12/2023
Cust. Order No.	
Account No.	FARRELLC

Details	Quantity	Unit Price	Net Amount	VAT Rate	VAT
Site:- Butterstile Lane, Prestwich M25 9XN Product:- Quarried 20mm Clean - Limestone Ticket(s):- 5257 Movement:- M-21114 Cust PO Ref:-	19.58	30.50	597.19	20.00	119.44
Site:- Butterstile Lane, Prestwich M25 9XN Product:- Quarried Gritsand Ticket(s):- 102023 Movement:- M-21373 Cust PO Ref:-	19.82	30.95	613.43	20.00	122.69
Site:- Butterstile Lane, Prestwich M25 9XN Product:- Quarried Gritsand Ticket(s):- 99973 Movement:- M-21375 Cust PO Ref:-	19.52	30.95	604.14	20.00	120.83
Site:- Butterstile Lane, Prestwich M25 9XN Product:- Quarried 20mm Clean - Limestone Ticket(s):- 99972, 1653, 5258, 5162 Movement:- M-21374 Cust PO Ref:-	78.06	30.50	2,380.83	20.00	476.17
Site:- Butterstile Lane, Prestwich M25 9XN Product:- Muck Away Ticket(s):- 370885 Movement:- M-21377 Cust PO Ref:-	1.00	245.00	245.00	20.00	49.00

See attached tickets for confirmation

PAYMENT DETAILS

BACS / CHAPS:

Bank: Natwest
Sort code: 01-10-01
Account number: 72393068
Account name: DHI Excavations Ltd
Cheques payable to: DHI Excavations Ltd
Terms: 30 Days

Total Net Amount	4,440.59
Total VAT Amount	888.13
Invoice Total	5,328.72



Farrell Civil Engineering Ltd
278 Utting Avenue
L4 8ST

Invoice 40369

VAT No: 936082909

Invoice No.	40369
Invoice/Tax Date	23/01/2024
Cust. Order No.	
Account No.	FARRELLC

Details

Site:- Butterstile Lane, Prestwich M25 9XN
Product:- Quarried 20mm Clean - Limestone
Ticket(s):- 5178, 1217
Movement:- M-21879
Cust PO Ref:-

Quantity	Unit Price	Net Amount	VAT Rate	VAT
38.18	30.50	1,164.49	20.00	232.90

See attached tickets for confirmation

PAYMENT DETAILS

BACS / CHAPS:

Bank: Natwest
Sort code: 01-10-01
Account number: 72393068
Account name: DHI Excavations Ltd
Cheques payable to: DHI Excavations Ltd
Terms: 30 Days

Total Net Amount	1,164.49
Total VAT Amount	232.90
Invoice Total	1,397.39



Paul Quimby
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-02421

Site Reference: Hilton Lane , Prestwich

Project / Job Ref: 21 1545

Order No: LKC211545-PO

Sample Receipt Date: 07/03/2024

Sample Scheduled Date: 07/03/2024

Report Issue Number: 1

Reporting Date: 13/03/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate

DETS Report No: 24-02421	~Date Sampled	04/03/24	04/03/24	04/03/24	04/03/24	04/03/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	TS101	TS102	TS103	SS101	SS102
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: LKC211545-PQ	~Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/03/2024	DETS Sample No	702769	702770	702771	702772	702773

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.4	7.4	7.4	7.9	8.0
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	323	182	253	113	160
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.32	0.18	0.25	0.11	0.16
Organic Matter (SOM)	%	< 0.1	MCERTS	6.1	2.4	3.4	0.6	0.6
Arsenic (As)	mg/kg	< 2	MCERTS	5	6	9	7	5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	6	9	12	13	9
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	12	17	30	15	9
Lead (Pb)	mg/kg	< 3	MCERTS	31	34	63	20	12
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	5	8	13	13	9
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	8	10	15	16	11
Zinc (Zn)	mg/kg	< 3	MCERTS	33	37	74	48	27
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~ Sample details provided by the customer



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-02421	~Date Sampled	04/03/24				
LK Consult Limited	~Time Sampled	None Supplied				
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	SS103				
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied				
~Order No: LKC211545-PQ	~Depth (m)	None Supplied				
Reporting Date: 13/03/2024	DETS Sample No	702774				

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected			
pH	pH Units	N/a	MCERTS	7.8			
Total Cyanide	mg/kg	< 1	NONE	< 1			
Free Cyanide	mg/kg	< 1	NONE	< 1			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	58			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.06			
Organic Matter (SOM)	%	< 0.1	MCERTS	0.8			
Arsenic (As)	mg/kg	< 2	MCERTS	7			
W/S Boron	mg/kg	< 1	NONE	< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	13			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	14			
Lead (Pb)	mg/kg	< 3	MCERTS	39			
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	11			
Selenium (Se)	mg/kg	< 2	MCERTS	< 2			
Vanadium (V)	mg/kg	< 1	MCERTS	14			
Zinc (Zn)	mg/kg	< 3	MCERTS	36			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)
~ Sample details provided by the customer



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-02421	~Date Sampled	04/03/24	04/03/24	04/03/24	04/03/24	04/03/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	TS101	TS102	TS103	SS101	SS102
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: LKC211545-PQ	~Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/03/2024	DETS Sample No	702769	702770	702771	702772	702773

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.20	0.13	0.14	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.28	0.19	0.18	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.27	0.18	0.19	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.15	0.14	0.12	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

~ Sample details provided by the customer



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Soil Analysis Certificate - Speciated PAHs

DETS Report No: 24-02421	~Date Sampled	04/03/24				
LK Consult Limited	~Time Sampled	None Supplied				
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	SS103				
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied				
~Order No: LKC211545-PQ	~Depth (m)	None Supplied				
Reporting Date: 13/03/2024	DETS Sample No	702774				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6			

~ Sample details provided by the customer



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-02421	~Date Sampled	04/03/24	04/03/24	04/03/24	04/03/24	04/03/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	TS101	TS102	TS103	SS101	SS102
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: LKC211545-PQ	~Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/03/2024	DETS Sample No	702769	702770	702771	702772	702773

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS 1D MS AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS 1D MS AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH CU 1D AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic >C34 - C44 : HS 1D MS+EH CU 1D AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS 1D MS+EH CU 1D AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS 1D MS AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS 1D MS AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH CU 1D AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH CU 1D AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic >C35 - C44 : HS 1D MS+EH CU 1D AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C44) : HS 1D MS+EH CU 1D AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

~ Sample details provided by the customer



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-02421	~Date Sampled	04/03/24				
LK Consult Limited	~Time Sampled	None Supplied				
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	SS103				
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied				
~Order No: LKC211545-PQ	~Depth (m)	None Supplied				
Reporting Date: 13/03/2024	DETS Sample No	702774				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6 : HS 1D MS AL	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8 : HS 1D MS AL	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C10 - C12 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C12 - C16 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C16 - C21 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C21 - C34 : EH CU 1D AL	mg/kg	< 10	MCERTS	< 10			
Aliphatic >C34 - C44 : HS 1D MS+EH CU 1D AL	mg/kg	< 10	NONE	< 10			
Aliphatic (C5 - C44) : HS 1D MS+EH CU 1D AL	mg/kg	< 21	NONE	< 21			
Aromatic >C5 - C7 : HS 1D MS AR	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8 : HS 1D MS AR	mg/kg	< 0.05	NONE	< 0.05			
Aromatic >C8 - C10 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C10 - C12 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C12 - C16 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C16 - C21 : EH CU 1D AR	mg/kg	< 3	MCERTS	< 3			
Aromatic >C21 - C35 : EH CU 1D AR	mg/kg	< 10	MCERTS	< 10			
Aromatic >C35 - C44 : HS 1D MS+EH CU 1D AR	mg/kg	< 10	NONE	< 10			
Aromatic (C5 - C44) : HS 1D MS+EH CU 1D AR	mg/kg	< 21	NONE	< 21			
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42			

~ Sample details provided by the customer



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-02421	~Date Sampled	04/03/24	04/03/24	04/03/24	04/03/24	04/03/24
LK Consult Limited	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	TS101	TS102	TS103	SS101	SS102
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: LKC211545-PQ	~Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/03/2024	DETS Sample No	702769	702770	702771	702772	702773

Determinand	Unit	RL	Accreditation						
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5	< 5

~ Sample details provided by the customer



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Lenham Heath
Maidstone
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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-02421	~Date Sampled	04/03/24				
LK Consult Limited	~Time Sampled	None Supplied				
~Site Reference: Hilton Lane , Prestwich	~TP / BH No	SS103				
~Project / Job Ref: 21 1545	~Additional Refs	None Supplied				
~Order No: LKC211545-PQ	~Depth (m)	None Supplied				
Reporting Date: 13/03/2024	DETS Sample No	702774				

Determinand	Unit	RL	Accreditation				
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2			
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5			
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2			
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2			
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2			
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5			

~ Sample details provided by the customer



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 24-02421	
LK Consult Limited	
~Site Reference: Hilton Lane , Prestwich	
~Project / Job Ref: 21 1545	
~Order No: LKC211545-PQ	
Reporting Date: 13/03/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
702769	TS101	None Supplied	None Supplied	25.4	Black sandy loam with vegetation
702770	TS102	None Supplied	None Supplied	12.1	Black sandy loam
702771	TS103	None Supplied	None Supplied	15.8	Black sandy loam
702772	SS101	None Supplied	None Supplied	11.1	Light brown sandy clay with stones
702773	SS102	None Supplied	None Supplied	11.6	Light brown sandy clay
702774	SS103	None Supplied	None Supplied	13.1	Light brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}

~ Sample details provided by the customer



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-02421

LK Consult Limited

~Site Reference: Hilton Lane, Prestwich

~Project / Job Ref: 21 1545

~Order No: LKC211545-PQ

Reporting Date: 13/03/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (all: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (all: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried

AR As Received

~ Sample details provided by the customer



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List of HWOL Acronyms and Operators

DETS Report No: 24-02421

LK Consult Limited

~Site Reference: Hilton Lane , Prestwich

~Project / Job Ref: 21 1545

~Order No: LKC211545-PQ

Reporting Date: 13/03/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total
~	Sample details provided by the customer

Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

APPENDIX C

GENERIC ASSESSMENT CRITERIA - SOIL

CATEGORY 4 SCREENING LEVELS

Substance	Residential (with home- grown produce)	Residential (without home- grown produce)	Allotments	Commercial	Public Open Space 1	Public Open Space 2
Arsenic	37 mg/kg	40 mg/kg	49 mg/kg	640 mg/kg	79 mg/kg	170 mg/kg
Benzene	0.87 mg/kg	3.3 mg/kg	0.18 mg/kg	98 mg/kg	140 mg/kg	230 mg/kg
Benzo(a)pyrene	5.0 mg/kg	5.3 mg/kg	5.7 mg/kg	77 mg/kg	10 mg/kg	21 mg/kg
Cadmium	22 mg/kg	150 mg/kg	3.9 mg/kg	410 mg/kg	220 mg/kg	880 mg/kg
Chromium VI	21 mg/kg	21 mg/kg	170 mg/kg	49 mg/kg	21 mg/kg	250 mg/kg
Lead	200 mg/kg	310 mg/kg	80 mg/kg	2300 mg/kg	630 mg/kg	1300 mg/kg

Tetrachlorethene (PCE) – 1% SOM	0.31 mg/kg	0.32 mg/kg	2.0 mg/kg	24 mg/kg	3,200 mg/kg	1,400 mg/kg
Tetrachlorethene (PCE) – 2.5% SOM	0.70 mg/kg	0.71 mg/kg	4.8 mg/kg	55 mg/kg	3,300 mg/kg	1,900 mg/kg
Tetrachlorethene (PCE) – 6% SOM	1.6 mg/kg	1.6 mg/kg	11 mg/kg	130 mg/kg	3,400 mg/kg	2,500 mg/kg
Trichlorethene (TCE) – 1% SOM	0.0093 mg/kg	0.0097 mg/kg	0.032 mg/kg	0.73 mg/kg	76 mg/kg	41 mg/kg
Trichlorethene (TCE) – 2.5% SOM	0.020 mg/kg	0.020 mg/kg	0.072 mg/kg	1.5 mg/kg	78 mg/kg	54 mg/kg
Trichlorethene (TCE) – 6% SOM	0.043 mg/kg	0.045 mg/kg	0.16 mg/kg	3.4 mg/kg	79 mg/kg	69 mg/kg
Vinyl Chloride (VC) – 1%SOM	0.0064 mg/kg	0.015 mg/kg	0.0017 mg/kg	1.1 mg/kg	7.8 mg/kg	18 mg/kg
Vinyl Chloride (VC) – 2.5%SOM	0.010 mg/kg	0.019 mg/kg	0.0031 mg/kg	1.4 mg/kg	7.8 mg/kg	19 mg/kg
Vinyl Chloride (VC) – 6%SOM	0.017 mg/kg	0.029 mg/kg	0.0058 mg/kg	2.2 mg/kg	7.8 mg/kg	19 mg/kg
1,2-Dichloroethane 1% SOM	0.11 mg/kg	0.16 mg/kg	0.054 mg/kg	12 mg/kg	300 mg/kg	300 mg/kg
1,2-Dichloroethane 2.5% SOM	0.18 mg/kg	0.24 mg/kg	0.10 mg/kg	17 mg/kg	310 mg/kg	330 mg/kg
1,2-Dichloroethane 6% SOM	0.31 mg/kg	0.41 mg/kg	0.19 mg/kg	29 mg/kg	310 mg/kg	380 mg/kg

Summary Table for the Generic Assessment Criteria for Human Health Risk Assessment Land Quality Management (LQM) S4ULs.

All GAC are based on sandy
loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Metals	Inorganic Arsenic	6%	37	40	43	640	79	170
	Beryllium	6%	1.7	1.7	35	12	2.2	63
	Boron	6%	290	11,000	45	240,000	21,000	46,000
	Cadmium	6%	11	85	1.9	190	120	532
	Chromium (III)	6%	910	910	18,000	8,600	1,500	33,000
	Chromium (VI)	6%	6.0	6.0	1.8	33	7.7	220
	Copper	6%	2,400	7,100	520	68,000	12,000	44,000
	Elemental Mercury	6%	1.2	1.2	21	58 (25.8) ^{vap}	16	30 (25.8) ^{vap}
	Inorganic Mercury	6%	40	56	19	1,100	120	240
	Methylmercury	6%	11	15	6.0	320	40	68
	Nickel (update 2015)	6%	126	181	53	983	231	804
	Selenium	6%	250	430	88	12,000	1,100	1,800
	Vanadium	6%	410	1,200	91	9,000	2,000	5,000
Zinc	6%	3,700	40,000	620	730,000	81,000	170,000	
BTEX Compounds	Benzene	1%	0.087	0.38	0.017	27	72	90
		2.5%	0.17	0.70	0.034	47	72	100
		6%	0.37	1.4	0.075	90	73	110
	Toluene	1%	130	880 (869) ^{vap}	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
		2.5%	290	1,900	51	110,000 (1,920) ^{vap}	56,000	95,000 (1,920) ^{vap}
		6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
	Ethylbenzene	1%	47	83	16	5,700 (518) ^{vap}	24,000	17,000 (518) ^{vap}
		2.5%	110	190	39	13,000 (1,220) ^{vap}	24,000	22,000 (1,220) ^{vap}
		6%	260	440	91	27,000 (2,840) ^{vap}	25,000	27,000 (2,840) ^{vap}
	o-xylene	1%	60	88	28	6,600 (478) ^{sol}	41,000	17,000 (478) ^{sol}
		2.5%	140	210	67	15,000 (1,120) ^{sol}	42,000	24,000 (1,120) ^{sol}
		6%	330	480	160	33,000 (2,620) ^{sol}	43,000	33,000 (2,620) ^{sol}
	m-xylene	1%	59	82	31	6,200 (625) ^{vap}	41,000	17,000 (625) ^{vap}
		2.5%	140	190	74	14,000 (1,470) ^{vap}	42,000	24,000 (1,470) ^{vap}
		6%	320	450	170	31,000 (3,460) ^{vap}	43,000	32,000 (3,460) ^{vap}
	p-xylene	1%	56	79	29	5,900 (576) ^{sol}	41,000	17,000 (576) ^{sol}
		2.5%	130	180	69	14,000 (1,350) ^{sol}	42,000	23,000 (1,350) ^{sol}
		6%	310	430	160	30,000 (3,170) ^{sol}	43,000	31,000 (3,170) ^{sol}

NOTES

^{sol} / ^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene	1%	210	3,000 (57.1) ^{sol}	34	84,000 (57.0) ^{sol}	15,000	29,000
		2.5%	510	4,700 (141) ^{sol}	85	97,000 (141) ^{sol}	15,000	30,000
		6%	1,100	6,000 (336) ^{sol}	200	100,000	15,000	30,000
	Acenaphthylene	1%	170	2,900 (86.1) ^{sol}	28	83,000 (86.1) ^{sol}	15,000	29,000
		2.5%	420	4,600 (212) ^{sol}	69	97,000 (212) ^{sol}	15,000	30,000
		6%	920	6,000 (506) ^{sol}	160	100,000	15,000	30,000
	Anthracene	1%	2,400	31,000 (1.17) ^{vap}	380	520,000	74,000	150,000
		2.5%	5,400	35,000	950	540,000	74,000	150,000
		6%	11,000	37,000	2,200	540,000	74,000	150,000
	Benz(a)anthracene	1%	7.2	11	2.9	170	29	49
		2.5%	11	14	6.5	170	29	56
		6%	13	15	13	180	29	62
	Benzo(a)pyrene (only)	1%	2.2	3.2	0.97	35	5.7	11
		2.5%	2.7	3.2	2.0	35	5.7	12
		6%	3.0	3.2	3.5	36	5.7	13
	Benzo(b)fluoranthene	1%	2.6	3.9	0.99	44	7.1	13
		2.5%	3.3	4.0	2.1	44	7.2	15
		6%	3.7	4.0	3.9	45	7.2	16
	Benzo(ghi)perylene	1%	320	360	290	3,900	640	1,400
		2.5%	340	360	470	4,000	640	1,500
		6%	350	360	640	4,000	640	1,600
	Benzo(k)fluoranthene	1%	77	110	37	1,200	190	370
		2.5%	93	110	75	1,200	190	410
		6%	100	110	130	1,200	190	440
	Chrysene	1%	15	30	4.1	350	57	93
		2.5%	22	31	9.4	350	57	110
		6%	27	32	19	350	57	120
	Dibenzo(ah)anthracene	1%	0.24	0.31	0.14	3.5	0.57	1.1
		2.5%	0.28	0.32	0.27	3.6	0.58	1.3
		6%	0.3	0.32	0.43	3.6	0.58	1.4
	Fluoranthene	1%	280	1,500	52	23,000	3,100	6,300
		2.5%	560	1,600	130	23,000	3,100	6,300
		6%	890	1,600	290	23,000	3,100	6,400
	Fluorene	1%	170	2,800 (36.0) ^{sol}	27	63,000 (30.9) ^{sol}	9,900	20,000
		2.5%	400	3,800 (76.5) ^{sol}	67	68,000	9,900	20,000
		6%	860	4,500 (183) ^{sol}	160	71,000	9,900	20,000
	Indeno(123-cd)pyrene	1%	27	45	9.5	500	82	150
		2.5%	36	46	21	510	82	170
		6%	41	46	39	510	82	180
	Naphthalene	1%	2.3 ^f	2.3 ^f	4.1 ^f	190 ^f (76.4) ^{sol}	4,900 ^f	1,200 ^f (76.4) ^{sol}
		2.5%	5.6 ^f	5.6 ^f	10 ^f	460 ^f (183) ^{sol}	4,900 ^f	1,900 ^f (183) ^{sol}
		6%	13 ^f	13 ^f	24 ^f	1,100 ^f (432) ^{sol}	4,900 ^f	3,000
	Phenanthrene	1%	95	1,300 (36.0) ^{sol}	15	22,000	3,100	6,200
		2.5%	220	1,500	38	22,000	3,100	6,200
		6%	440	1,500	90	22,000	3,100	6,300
	Pyrene	1%	620	3,700	110	54,000	7,400	15,000
		2.5%	1,200	3,800	270	54,000	7,400	15,000
		6%	2,000	3,800	620	54,000	7,400	15,000
Coal Tar (B(a)P as surrogate marker)	1%	0.79	1.2	0.32	15	2.2	4.4	
	2.5%	0.98	1.2	0.67	15	2.2	4.7	
	6%	1.1	1.2	1.2	15	2.2	4.8	

NOTES

^{Sol / vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^f = naphthalene is based on comparison of inhalation exposure with TDI_{Inhal} for localised effect.

All GAC are based on sandy loam soils with a pH 7.

LQM Generic Assessment Criteria (mg/kg) Dry weight soil

Contaminant	SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Aliphatic							
EC 5-6	1%	42	42	730	3,200 (304) ^{sol}	570,000(304) ^{sol}	95,000 (304) ^{sol}
EC>6-8	1%	100	100	2,300	7,800 (144) ^{sol}	600,000	150,000 (144) ^{sol}
EC>8-10	1%	27	27	320	2,000 (78) ^{sol}	13,000	14,000 (78) ^{vap}
EC>10-12	1%	130 (48) ^{vap}	130 (48) ^{vap}	2,200	9,700 (48) ^{sol}	13,000	21,000 (48) ^{vap}
EC>12-16	1%	1,100 (24) ^{sol}	1,100 (24) ^{sol}	11,000	59,000 (24) ^{sol}	13,000	25,000 (24) ^{sol}
EC>16-35	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
EC>35-44	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
Aliphatic							
EC 5-6	2.5%	78	78	1,700	5,900 (558) ^{sol}	590,000	130,000 (558) ^{sol}
EC>6-8	2.5%	230	230	5,600	17,000 (322) ^{sol}	610,000	220,000 (322) ^{sol}
EC>8-10	2.5%	65	65	770	4,800 (190) ^{vap}	13,000	18,000 (190) ^{vap}
EC>10-12	2.5%	330 (118) ^{vap}	330 (118) ^{vap}	4,400	23,000 (118) ^{vap}	13,000	23,000 (118) ^{vap}
EC>12-16	2.5%	2,400 (59) ^{sol}	2,400 (59) ^{sol}	13,000	82,000 (59) ^{sol}	13,000	25,000 (59) ^{sol}
EC>16-35	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
EC>35-44	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
Aliphatic							
EC 5-6	6%	160	160	3,900	12,000 (1,150) ^{sol}	600,000	180,000 (1,150) ^{sol}
EC>6-8	6%	530	530	13,000	40,000 (736) ^{sol}	620,000	320,000 (736) ^{sol}
EC>8-10	6%	150	150	1,700	11,000 (451) ^{vap}	13,000	21,000 (451) ^{vap}
EC>10-12	6%	760 (283) ^{vap}	760 (283) ^{vap}	7,300	47,000 (283) ^{vap}	13,000	24,000 (283) ^{vap}
EC>12-16	6%	4,300 (142) ^{sol}	4,400 (142) ^{sol}	13,000	90,000 (142) ^{sol}	13,000	26,000 (142) ^{sol}
EC>16-35	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
EC>35-44	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
Aromatic							
EC5-7(benzene as non-threshold)	1%	70	370	13	26,000 (1,220) ^{sol}	56,000	76,000 (1,220) ^{sol}
EC>7-8(toluene)	1%	130	860	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
EC>8-10	1%	34	47	8.6	3,500 (613) ^{vap}	5,000	7,200 (613) ^{vap}
EC>10-12	1%	74	250	13	16,000 (364) ^{sol}	5,000	9,200 (364) ^{sol}
EC>12-16	1%	140	1,800	23	36,000 (169) ^{sol}	5,100	10,000
EC>16-21	1%	260 ^f	1,900 ^f	46 ^f	28,000 ^f	3,800 ^f	7,600 ^f
EC>21-35	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	2.5%	140	690	27	46,000 (2,260) ^{sol}	56,000	84,000 (2,260) ^{sol}
EC>7-8(toluene)	2.5%	290	1,800	51	110,000 (1,920) ^{sol}	56,000	95,000 (1,920) ^{sol}
EC>8-10	2.5%	83	110	21	8,100 (1,500) ^{vap}	5,000	8,500 (1,500) ^{vap}
EC>10-12	2.5%	180	590	31	28,000 (899) ^{sol}	5,000	9,700 (899) ^{sol}
EC>12-16	2.5%	330	2,300 (419) ^{sol}	57	37,000	5,100	10,000
EC>16-21	2.5%	540 ^f	1,900 ^f	110 ^f	28,000 ^f	3,800 ^f	7,700 ^f
EC>21-35	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	6%	300	1,400	57	86,000 (4,710) ^{sol}	56,000	92,000 (4,710) ^{sol}
EC>7-8(toluene)	6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
EC>8-10	6%	190	270	51	17,000 (3,580) ^{vap}	5,000	9,300 (3,580) ^{vap}
EC>10-12	6%	380	1,200	74	34,000 (2,150) ^{sol}	5,000	10,000
EC>12-16	6%	660	2,500	130	38,000	5,100	10,000
EC>16-21	6%	930 ^f	1,900 ^f	260 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>21-35	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
EC>35-44	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
Aliphatic +Aromatic >EC44	1%	1,600 ^f	1,900 ^f	1,200 ^f	28,000 ^f	3,800 ^f	7,800 ^f
	2.5%	1,800 ^f	1,900 ^f	2,100 ^f	28,000 ^f	3,800 ^f	7,800 ^f
	6%	1,900 ^f	1,900 ^f	3,000 ^f	28,000 ^f	3,800 ^f	7,900 ^f

NOTES

Sol / vap = solubility / vapour limit (potentially use if free product identified, although highly conservative).

f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chloalkanes and Alkenes & Explosives	1,2 Dichloroethane (DCA)	1%	7.1E-03	9.2E-03	4.6E-03	0.67	29	21
		2.5%	1.1E-02	1.3E-02	8.3E-03	0.97	29	24
		6%	1.9E-02	2.3E-02	1.6E-02	1.7	29	28
	1,1,1 Trichloroethane (TCA)	1%	8.8	9.0	48	660	140,000	57,000 (1,425) ^{vap}
		2.5%	18	18	110	1,300	140,000	76,000 (2,915) ^{vap}
		6%	39	40	240	3,000	140,000	100,000 (6,392) ^{vap}
	1,1,2,2-Tetrachloroethanes (PCA)	1%	1.6	3.9	0.41	270	1,400	1,800
		2.5%	3.4	8.0	0.89	550	1,400	2,100
		6%	7.5	17	2.0	1,100	1,400	2,300
	1,1,1,2-Tetrachloroethanes (PCA)	1%	1.2	1.5	0.79	110	1,400	1,500
		2.5%	2.8	3.5	1.9	250	1,400	1,800
		6%	6.4	8.2	4.4	560	1,400	2,100
	Tetrachloroethene (PCE)	1%	0.18	0.18	0.65	19	1,400	810 (424) ^{sol}
		2.5%	0.39	0.40	1.5	42	1,400	1,100 (951) ^{sol}
		6%	0.90	0.92	3.6	95	1,400	1,500
	Tetrachloromethane (carbon tetrachloride)	1%	2.6E-02	2.6E-02	0.45	2.9	890	190
		2.5%	5.6E-02	5.6E-02	1.0	6.3	920	270
		6%	0.13	0.13	2.4	14	950	400
	Trichloroethene (TCE)	1%	1.6E-02	1.7E-02	4.1E-02	1.2	120	70
		2.5%	3.4E-02	3.6E-02	9.1E-02	2.6	120	91
		6%	7.5E-02	8.0E-02	0.21	5.7	120	120
	Trichloromethane (chloroform)	1%	0.91	1.2	0.42	99	2,500	2,600
		2.5%	1.7	2.1	0.83	170	2,500	2,800
		6%	3.4	4.2	1.7	350	2,500	3,100
	Chloroethene (vinyl chloride)	1%	6.4E-04	7.7E-04	5.5E-04	5.9E-02	3.5	4.8
		2.5%	8.7E-04	1.0E-03	1.0E-03	7.7E-02	3.5	5.0
		6%	1.4E-03	1.5E-03	1.8E-03	0.12	3.5	5.4
	2,4,6-Trinitrotoluene (TNT)	1%	1.6	65	0.24	1,000	130	260
		2.5%	3.7	66	0.58	1,000	130	270
		6%	8.1	66	1.4	1,000	130	270
	RDX	1%	120	13,000	17	210,000	26,000	49,000 (18.7) ^{sol}
		2.5%	250	13,000	38	210,000	26,000	51,000
		6%	540	13,000	85	210,000	27,000	53,000
	HMX	1%	5.7	6,700	0.86	110,000	13,000	23,000 (0.35) ^{vap}
		2.5%	13	6,700	1.9	110,000	13,000	23,000 (0.39) ^{vap}
		6%	26	6,700	3.9	110,000	13,000	24,000 (0.48) ^{vap}
Pesticides	Aldrin	1%	5.7	7.3	3.2	170	18	30
		2.5%	6.6	7.4	6.1	170	18	31
		6%	7.1	7.5	9.8	170	18	31
	Dieldrin	1%	0.97	7.0	0.17	170	18	30
		2.5%	2.0	7.3	0.41	170	18	30
		6%	3.5	7.4	0.96	170	18	31
	Atrazine	1%	3.3	610	0.5	9,300	1,200	2,300
		2.5%	7.8	620	1.2	9,400	1,200	2,400
		6%	17.4	620	2.7	9,400	1,200	2,400
	Dichlorvos	1%	3.2E-02	6.4	4.9E-03	140	16	26
		2.5%	6.6E-02	6.5	1.0E-02	140	16	26
		6%	0.14	6.6	2.2E-02	140	16	27
	Endosulfanns (2 isomers)	1%	7.4	160 (3.0E-03) ^{vap}	1.2	5,600 (3.0E-03) ^{vap}	1,200	2,300
		2.5%	18	280 (7.0E-03) ^{vap}	2.9	7,400 (7.0E-03) ^{vap}	1,200	2,400
		6%	41	410 (1.6E-02) ^{vap}	6.8	8,400 (1.6E-02) ^{vap}	1,200	2,500
	Hexachlorocyclohexane (3 isomers), inc Lindane	1%	8.5E-02	3.7	1.3E-02	65	8.1	15
		2.5%	0.2	3.8	3.2E-02	65	8.1	15
		6%	0.46	3.8	7.7E-02	65	8.1	16

NOTES

Sol / vap = solubility / vapour limit (potentially use if free product identified, although highly conservative).

All GAC are based on
sandy loam soils with a pH
7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chlorobenzenes	Chlorobenzene	1%	0.46	0.46	5.9	56	11,000	1,300 (675) ^{sol}
		2.5%	1.0	1.0	14	130	13,000	2,000 (1,520) ^{sol}
		6%	2.4	2.4	32	290	14,000	2,900
	Dichlorobenzenes (3 isomers)	1%	23	24	94	2,000 (571) ^{sol}	90,000	24,000 (571) ^{sol}
		2.5%	55	57	230	4,800 (1,370) ^{sol}	95,000	36,000 (1,370) ^{sol}
		6%	130	130	540	11,000 (3,240) ^{sol}	98,000	51,000 (3,270) ^{sol}
	Trichlorobenzenes (3 isomers)	1%	2.6	2.6	55	220	15,000	1,700 (318) ^{vap}
		2.5%	6.4	6.4	140	530	17,000	2,600 (786) ^{vap}
		6%	15	15	320	1,300	19,000	4,000 (1,880) ^{vap}
	Tetrachlorobenzenes (3 isomers)	1%	0.66	0.75	0.38	49 (39.4) ^{vap}	78	110 (39) ^{vap}
		2.5%	1.6	1.9	0.90	120 (98.1) ^{vap}	79	120
		6%	3.7	4.3	2.2	240 (235) ^{vap}	79	130
	Pentachlorobenzene	1%	5.8	19	1.2	640 (43.0) ^{sol}	100	190
		2.5%	12	30	3.1	770 (107) ^{sol}	100	190
		6%	22	38	7.0	830	100	190
	Hexachlorobenzene	1%	1.8 (0.20) ^{vap}	4.1 (0.20) ^{vap}	0.47	110 (0.20) ^{vap}	16	30
		2.5%	3.3 (0.50) ^{vap}	5.7 (0.50) ^{vap}	1.1	120	16	30
		6%	4.9	6.7 (1.2) ^{vap}	2.5	120	16	30
Chlorophenol	Chlorophenols (4 congeners)	1%	0.87 ^g	94	0.13 ^g	3,500	620	1,100
		2.5%	2.0	150	0.30	4,000	620	1,100
		6%	4.5	210	0.70	4,300	620	1,100
	Pentachlorophenol	1%	0.22	27 (16.4) ^{vap}	3.0E-02	400	60	110
		2.5%	0.52	29	8.0E-02	400	60	120
		6%	1.2	31	0.19	400	60	120
Others	Carbon Disulphide	1%	0.14	0.14	4.8	11	11,000	1,300
		2.5%	0.29	0.29	10	22	11,000	1,900
		6%	0.62	0.62	23	47	11,000	2,700
	Hexachlorobutadiene	1%	0.29	0.32	0.25	31	25	48
		2.5%	0.7	0.78	0.61	66	25	50
		6%	1.6	1.8	1.4	120	25	51
	Phenol	1%	280	750	66	760 ^{dir} (31,000)	760 ^{dir} (11,000)	760 ^{dir} (8,600)
		2.5%	550	1,300	140	1,500 ^{dir} (35,000)	1,500 ^{dir} (11,000)	1,500 ^{dir} (9,700)
		6%	1,100	2,300	280	3,200 ^{dir} (37,000)	3,200 ^{dir} (11,000)	3,200 ^{dir} (11,000)

NOTES

^{Sol / vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^{dir} = S4uls based on threshold protective of direct skin contact with phenol (brackets long term exposure for illustration purposes).

^g = derived based on 2,3,4,6-tetrachlorophenol.

APPENDIX D

PHOTOGRAPHS – DEPTH VALIDATION

Plot 1



View of front garden of Plot 1. Fully hardstood.



View of rear garden of Plot 1. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) will have artificial grass.

Plot 2



View of front garden of Plot 2. Fully hardstood.



View of rear garden of Plot 2. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) will have artificial grass.

Plot 3



View of front garden of Plot 3. Fully hardstood.



View of rear garden of Plot 3. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) present in the photograph will have artificial grass.

Plot 4



View of front garden of Plot 4. Fully hardstood.



View of rear garden of Plot 4. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) present in the photograph will have artificial grass.

Plot 5



View of front garden of Plot 5. Fully hardstood.



View of rear garden of Plot 5. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) present in the photograph will have artificial grass.

Plot 6



View of front garden of Plot 6. Fully hardstood.



View of rear garden of Plot 6. Retaining wall concrete extends to permeable paving and first generation quarried limestone and gritstone (purchased as a product) present in the photograph will have artificial grass.

Plot 6 (side landscaped area)

	
View of front garden of Plot 6. Has small side landscaped area.	View of soil in capping layer excavation in the side landscaping at Plot 6. Identified Geo-membrane at base.
	
Depth measurement in the side landscaping at Plot 6 (<i>circa</i> 600mm soil cover).	

Plot 7



View of front garden of Plot 7. Fully hardstood.



View of rear garden of Plot 7. Soil area will be turfed.



View of soil in capping layer excavation in the rear of Plot 7. Identified Geo-membrane at base.



Depth measurement in the rear of Plot 7 (circa 650mm soil cover).

Plot 8



View of front garden of Plot 8. Fully hardstood.



View of rear garden of Plot 8. Soil area will be turfed.



View of soil in capping layer excavation in the rear of Plot 8. Identified Geo-membrane at base.



Depth measurement in the rear of Plot 8 (circa 600mm soil cover).

Landscaped Area - North

	
View of northern landscaped area.	View of soil in capping layer excavation in the northern landscaped area. Identified Geo-membrane at base.
	
Depth measurement in northern landscaped area (circa 850mm soil cover).	

Landscaped Area - Northeast



View of northeastern landscaped area.



View of soil in capping layer excavation in the northeastern landscaped area. Identified Geo-membrane at base.



Depth measurement in northeastern landscaped area (circa 600mm soil cover).

Landscaped Area - Northwest

	
View of northwestern landscaped area.	View of soil in capping layer excavation in the northwestern landscaped area. Identified Geo-membrane at base.
	
Depth measurement in northwestern landscaped area (<i>circa</i> 600mm soil cover).	

APPENDIX E

DISPOSAL INFORMATION

DHI Excavations Ltd 11 - 13 Church Street, Farnworth, Bolton. BL4 8AG		Serial No. DHI/ 0001925																				
Duty of Care - Controlled Waste Transfer Note		SIC Code: 41.20/2	Official use only																			
A Description of the waste	1. How is the waste contained? ☒ Loose ☐ Skips ☐ Sacks ☐ Drums ☐ Other (Specify):																					
	2. Describe the waste being transferred NON HAZ SOIL Classification code: 17-05-04																					
	3. Quantity: 1.600 kg/Tonnes/m3 Group number:																					
	4. The Landfill Tax (Qualifying Material) order schedule 2011 ☐ Applicable																					
B Producer Details	1. Full name (print): FARRELL CIV ENG LTD.																					
	2. Company name, address and postcode: 64 MILL LANE, WEST DERBY, LIVERPOOL, L12 7JB.																					
	3. Which of the following are you? (Please tick one or more boxes)																					
	<table border="0"> <tr> <td>A</td> <td>☒ Waste producer</td> <td>☐ Soil Producer</td> <td>☐ Waste collection/disposal authority</td> <td>☐ Broker</td> </tr> <tr> <td>B</td> <td colspan="2">☐ Holder of disposal / management licence</td> <td colspan="2">☐ Exempt from carrier Licence / Carrier number(s) Issued by:</td> </tr> <tr> <td>C</td> <td colspan="2">☐ Exempt from licensing requirements</td> <td colspan="2">☐ Exempt from carrier registration</td> </tr> <tr> <td colspan="5">Reason:</td> </tr> </table>			A	☒ Waste producer	☐ Soil Producer	☐ Waste collection/disposal authority	☐ Broker	B	☐ Holder of disposal / management licence		☐ Exempt from carrier Licence / Carrier number(s) Issued by:		C	☐ Exempt from licensing requirements		☐ Exempt from carrier registration		Reason:			
A	☒ Waste producer	☐ Soil Producer	☐ Waste collection/disposal authority	☐ Broker																		
B	☐ Holder of disposal / management licence		☐ Exempt from carrier Licence / Carrier number(s) Issued by:																			
C	☐ Exempt from licensing requirements		☐ Exempt from carrier registration																			
Reason:																						
C Carrier Details	1. Full name (print): DHI Excavations Ltd																					
	2. Company name, address and postcode: 11 - 13 Church Street, Farnworth, Bolton. BL4 8AG																					
D First Transfer (producer to carrier)	☒ Registered carrier (give number): CBDU181466 SIC: 43120																					
	We have fulfilled our obligation with regards to the waste hierarchy regulations 12 of Waste (England and Wales) Regulations 2011																					
	1. Place of transfer: BUTTERSTONE LANE, PRESTON, M.C. M25 9XN																					
	2. Date of transfer: 18/10/22 TO 17/10/22 (for multiple transfer give between dates, see notes)																					
E Disposer Details	3. Name and address of broker arranging transfer (if applicable): WCL No.																					
	4. Producers representatives Carriers representatives Name (print): NEIL FARRELL Name (print): SEAN KINGSTON Signed: <i>[Signature]</i> Signed: <i>[Signature]</i>																					
	1. Full name (print): WHITEHEAD DESTINATION LTD.																					
	2. Company name, address and postcode: 100 BARBICOLL SQUARE, MANCHESTER, M2 3AB.																					
F Second Transfer (carrier to disposer)	3. Which of the following are you? (Please tick one or more boxes)																					
	☐ Holder of waste disposal / management licence (give number): EP/2P 34 33 AQ Issued by: EA																					
	☐ Exempt from licence requirements (give reason):																					
	1. Place of transfer: WHITEHEAD I/F SITE, LOWER GREEN RD, ASTLEY, M29 7JZ																					
F Second Transfer (carrier to disposer)	2. Date of transfer: 18/10/22 TO 17/10/22 (for multiple consignments give between dates)																					
	3. Name and address of broker arranging transfer (if applicable):																					
	4. Carriers representatives Disposers representatives Name (print): SEAN KINGSTON Name (print): On site - Amy Long Signed: <i>[Signature]</i> Signed: MM Company name: DHI Excavations Ltd Company name: Green earth																					

Important! This page must be retained by you, on a register held by you, for at least two years from the date of the last transfer to which the note applies.
 White - DHI copy, Blue - Disposer copy, Yellow - Producer copy, Pink - Spare

Certificate of Registration under the Waste (England and Wales) Regulations 2011

Regulation authority

Name



Address

National Customer Service Centre
99 Parkway Avenue
Sheffield
S9 4WF

Telephone number

03708 506506

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011.

Carriers details

Name of registered carrier

DHI EXCAVATIONS LIMITED

Registered as

an upper tier waste carrier, broker and dealer

Registration number

CBDU181466

Address of place of business

FARNWORTH SNOOKER & SOCIAL CLUB
CHURCH STREET
FARNWORTH
BOLTON
BL4 8AG

Telephone number

01617944550

Date of registration

Wednesday 10th June 2020

Expiry date of

registration (unless
revoked)

Sunday 16th July 2023

Making changes to your registration

Your registration will last 3 years and will need to be renewed after this period. If any of your details change, you must notify us within 28 days of the change.

Notice of transfer

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 21 of the Environmental Permitting (England and Wales) Regulations 2010 transfers

Permit number

EPR/ZP3433AQ

to

Whitehead Restoration Limited ("the operator")

whose registered office is

**100 Barblrolli Square
Manchester
M2 3AB**

company registration number 08936769

to operate a regulated facility at

**Whitehead Landfill Site
Lower Green Lane
Astley
Wigan
M29 7JZ**

from Viridor Waste Management Limited

to the extent set out in the schedules.

The notice shall take effect from 28/09/2015

**The number of the new permit granted to Whitehead Restoration Limited is
EPR/ZP3433AQ**

Name	Date
Phillip Lamb	28/09/2015

Authorised on behalf of the Environment Agency

Based across the UK with
offices in Manchester,
London, Liverpool and Glasgow.

Manchester (Head Office)

Unit 29,
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

t: 0161 763 7200
e: info@thelkgroup.com

Swindon

39 Bowman House Business
Centre, Whitehill Lane, Royal
Wootton Bassett, Swindon
SN4 7DB

t: 01793 987390
e: info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

t: 0141 773 6269
e: info@thelkgroup.com

Liverpool

The Corn Exchange
Fenwick Street
Liverpool
L2 7QL

t: 0151 235 8716
e: info@thelkgroup.com

London

2 Falcon Gate
Welwyn Garden City
Hertfordshire
AL7 1TW

t: 01707 909059
e: info@thelkgroup.com



- » Geotechnical
- » Contaminated Land
- » Flood Risk and Drainage
- » Asbestos
- » Invasive Species
- » Land Remediation
- » Project Management
- » Land Drilling