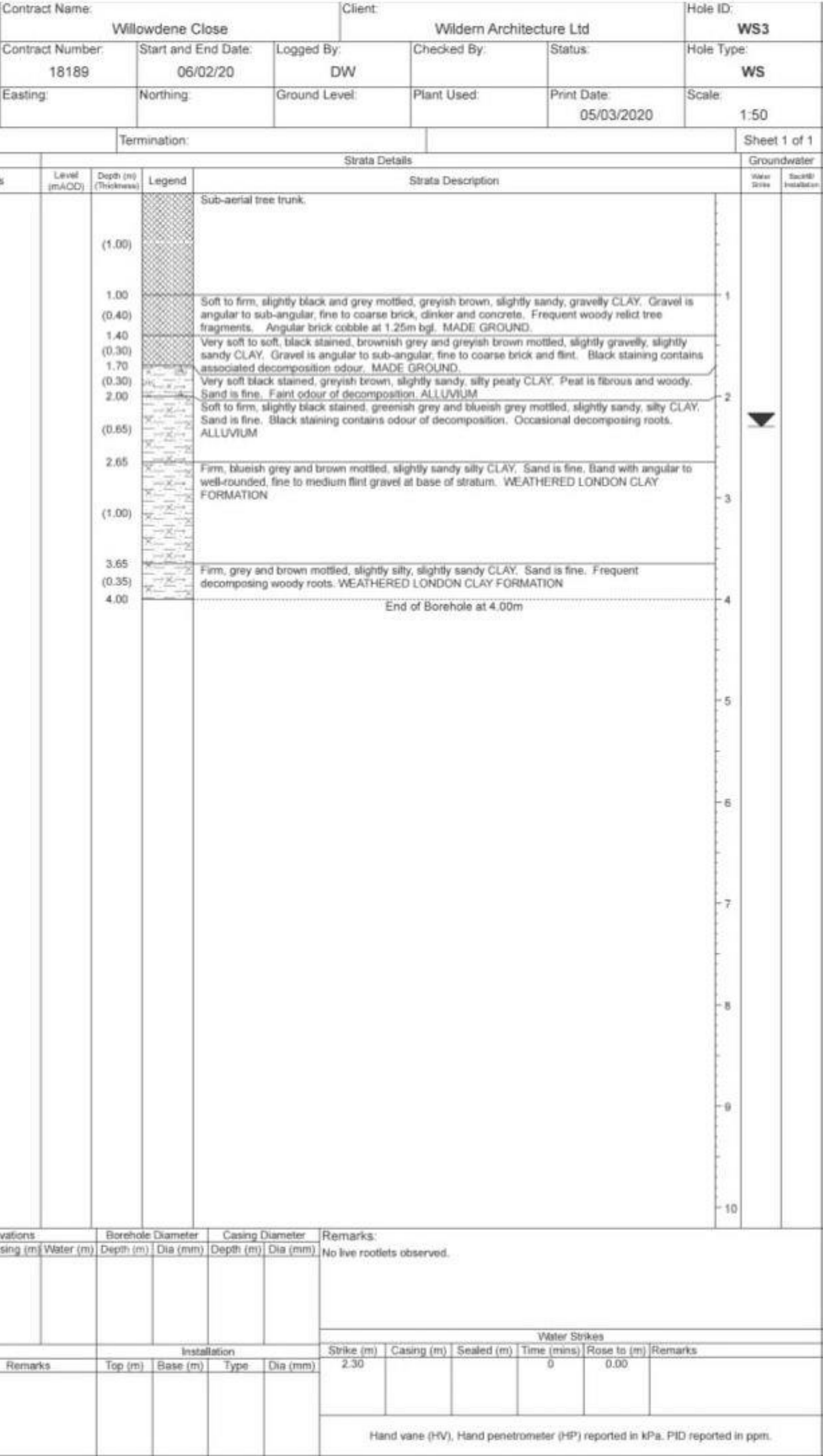




Weather: _____ Termination: _____ Sheet 1 of 1

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	No live rootlets observed.						
										Water Strikes					
Chiselling					Installation					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	1.00			0	0.00		
										Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.					





Weather: Termination: Sheet 1 of 1

[illegible]

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Rootlets observed to 3.6m bgl.					
										Water Strikes				
Chiselling					Installation				Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	2.30			0	0.00	
										Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.				

Appendix J Geotechnical In-Situ and Laboratory Testing

Appendix J.1 Classification

Classification based on SPT "N" values:

The inferred undrained strength of the cohesive soils was based on the SPT "N" blow counts, derived from the relationship suggested by Stroud (1974) and classified using **Table J.1.1**. (Ref: Stroud, M. A. 1974, "The Standard Penetration Test – its application and interpretation", Proc. ICE Conf. on Penetration Testing in the UK, Birmingham. Thomas Telford, London.).

Table J.1.1 SPT "N" Blow Count Cohesive Classification

Classification	Undrained Cohesive Strength C_u (kPa)
Extremely low	<10
Very low	10 – 20
Low	20 – 40
Medium	40 – 75
High	75 – 150
Very high	150 – 300
Extremely high	> 300

Note: (Ref: BS EN ISO 14688-2:2004+A1:2013 Clause 5.3.)

Appendix J.2 Interpretation

Table J.2.1 Interpretation of DPSH Blow Counts

DP	Strata	Equivalent SPT N60 Blow Counts	Inferred Cohesive Strength/Granular Density/Approximate CIRIA Chalk Grade
DP2	ALV 1.90 – 2.10 CLAY	≤4	Very low ($C_u = \leq 20\text{kPa}$)
	WLCF 2.10 – 3.40 CLAY	4 – 8	Low ($C_u = 20 - 40\text{kPa}$)
	WLCF [†] 3.40 – 6.00 CLAY	13 – 21	Medium to high ($C_u = 65 - 105\text{kPa}$)
DP3	ALV 1.70 – 2.80 CLAY	≤4 – 8	Very low to low ($C_u = \leq 20 - 40\text{kPa}$)
	WLCF 2.80 – 3.80 CLAY	8 – 13	Low to medium ($C_u = 40 - 65\text{kPa}$)
	WLCF [†] 3.80 – 6.00 CLAY	13 – 17	Medium to high ($C_u = 65 - 85\text{kPa}$)
DP4	ALV 2.00 – 3.10 CLAY	≤4 – 8	Very low to low ($C_u = \leq 20 - 40\text{kPa}$)
	WLCF 3.10 – 3.90 CLAY	4 – 8	Low ($C_u = 20 - 40\text{kPa}$)
	WLCF [†] 3.90 – 6.00 CLAY	8 – 17	Medium to high ($C_u = 40 - 85\text{kPa}$)

Note: [†] Ground conditions inferred past the base of windowless sampler boreholes.

Appendix J.3 Geotechnical In-Situ and Laboratory Results

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Remarks Core removed to 1mb/gl. Rod kicked over.	Fall Height	750mm	Cone Base Diameter	50.5mm
	Hammer Weight	64.5kg	Final Depth	2m
	Probe Type	DPSH	Energy Ratio (Er)	%

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
1					
2					10
3					40
4					65
5					85
6					
7					
8					
9					
10					

Remarks Core removed to 1mb/gl. Then fell under hammer weight to 1.5mb/gl.	Fall Height	750mm	Cone Base Diameter	50.5mm
	Hammer Weight	64.5kg	Final Depth	6m
	Probe Type	DPSH	Energy Ratio (Er)	%

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm	Torque (Nm)
0	0	
0.1	4	
0.2	9	
0.3	2	
0.4	2	
0.5	2	50
0.6	2	
0.7	2	
0.8	2	
0.9	2	
1.0	2	
1.1	2	
1.2	2	
1.3	2	
1.4	2	
1.5	2	
1.6	2	
1.7	2	
1.8	2	
1.9	2	
2.0	2	50
2.1	2	
2.2	2	
2.3	2	
2.4	2	
2.5	2	
2.6	2	
2.7	2	
2.8	2	
2.9	2	
3.0	2	65
3.1	2	
3.2	2	
3.3	2	
3.4	2	
3.5	2	
3.6	2	
3.7	2	
3.8	2	
3.9	2	
4.0	2	110
4.1	2	
4.2	2	
4.3	2	
4.4	2	
4.5	2	
4.6	2	
4.7	2	
4.8	2	
4.9	2	
5.0	2	
5.1	2	
5.2	2	
5.3	2	
5.4	2	
5.5	2	
5.6	2	
5.7	2	
5.8	2	
5.9	2	
6.0	2	115
6.1	2	
6.2	2	
6.3	2	
6.4	2	
6.5	2	
6.6	2	
6.7	2	
6.8	2	
6.9	2	
7.0	2	
7.1	2	
7.2	2	
7.3	2	
7.4	2	
7.5	2	
7.6	2	
7.7	2	
7.8	2	
7.9	2	
8.0	2	
8.1	2	
8.2	2	
8.3	2	
8.4	2	
8.5	2	
8.6	2	
8.7	2	
8.8	2	
8.9	2	
9.0	2	
9.1	2	
9.2	2	
9.3	2	
9.4	2	
9.5	2	
9.6	2	
9.7	2	
9.8	2	
9.9	2	
10.0	2	

Remarks	Fall Height	750mm	Cone Base Diameter	50.5mm
Fell under hammer weight	Hammer Weight	64.5kg	Final Depth	6m
	Probe Type	DPSH	Energy Ratio (Er)	%

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
0					
0.1					
0.2					
0.3					
0.4					
0.5					
0.6					
0.7					
0.8					
0.9					
1.0					
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2.0					
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3.0					
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					
3.7					
3.8					
3.9					
4.0					
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
5.0					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
6.0					
6.1					
6.2					
6.3					
6.4					
6.5					
6.6					
6.7					
6.8					
6.9					
7.0					
7.1					
7.2					
7.3					
7.4					
7.5					
7.6					
7.7					
7.8					
7.9					
8.0					
8.1					
8.2					
8.3					
8.4					
8.5					
8.6					
8.7					
8.8					
8.9					
9.0					
9.1					
9.2					
9.3					
9.4					
9.5					
9.6					
9.7					
9.8					
9.9					
10.0					

Remarks Fell under hammer weight. Obstruction, hole stopped.	Fall Height	750mm	Cone Base Diameter	50.5mm
	Hammer Weight	64.5kg	Final Depth	0.5m
	Probe Type	DPSH	Energy Ratio (Er)	%

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm				Torque (Nm)
0	0	10	20	30	40
0.1	4				
0.2	5				
0.3					
0.4					
0.5					
0.6					
0.7					
0.8					
0.9					
1.0					
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2.0					
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3.0					
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					
3.7					
3.8					
3.9					
4.0					
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
5.0					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
6.0					
6.1					
6.2					
6.3					
6.4					
6.5					
6.6					
6.7					
6.8					
6.9					
7.0					
7.1					
7.2					
7.3					
7.4					
7.5					
7.6					
7.7					
7.8					
7.9					
8.0					
8.1					
8.2					
8.3					
8.4					
8.5					
8.6					
8.7					
8.8					
8.9					
9.0					
9.1					
9.2					
9.3					
9.4					
9.5					
9.6					
9.7					
9.8					
9.9					
10.0					

Remarks	Fall Height	750mm	Cone Base Diameter	50.5mm
Fell under hammer weight. Obstruction, hole stopped.	Hammer Weight	64.5kg	Final Depth	0.3m
	Probe Type	DPSH	Energy Ratio (Er)	%

Project Name:	Willowdene Close	Project No.	18189	Co-ords:		Hole Type	DP
Location:	Havant, PO9 3QP	Level:	m AOD	Scale	1:50	Logged By	SW
Client:	Wildern Architecture Ltd	Dates:	06/02/2020				

Depth (m)	Blows/100mm	Torque (Nm)
0		
0.1		
0.2		
0.3		
0.4		
0.5		
0.6		
0.7		
0.8		
0.9		
1		25
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2		25
2.1		
2.2		
2.3		
2.4		
2.5		
2.6		
2.7		
2.8		
2.9		
3		30
3.1		
3.2		
3.3		
3.4		
3.5		
3.6		
3.7		
3.8		
3.9		
4		75
4.1		
4.2		
4.3		
4.4		
4.5		
4.6		
4.7		
4.8		
4.9		
5		100
5.1		
5.2		
5.3		
5.4		
5.5		
5.6		
5.7		
5.8		
5.9		
6		
6.1		
6.2		
6.3		
6.4		
6.5		
6.6		
6.7		
6.8		
6.9		
7		
7.1		
7.2		
7.3		
7.4		
7.5		
7.6		
7.7		
7.8		
7.9		
8		
8.1		
8.2		
8.3		
8.4		
8.5		
8.6		
8.7		
8.8		
8.9		
9		
9.1		
9.2		
9.3		
9.4		
9.5		
9.6		
9.7		
9.8		
9.9		
10		

Remarks	Fall Height	750mm	Cone Base Diameter	50.5mm
Fell under hammer weight. Third attempt.	Hammer Weight	64.5kg	Final Depth	6m
	Probe Type	DPSH	Energy Ratio (Er)	%

Appendix K Chemical Laboratory Testing

Appendix K.1 Conceptual Site Model

Table K.1 CSM Revised Post Testing

Source	Potential Contaminant	Exposure Pathway	Receptor	Initial Assessment from Desk Study and Main Investigation Report Information			Comments	Proposed Investigation
				Severity	Probability	Risk		
Domestic Garages And Made Ground On-site history and current site usage	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Gas Maintenance	Minor	Unlikely	Very low	No significant levels of contaminants noted, severity defaults to minor.	No additional investigation considered necessary in this context, although additional analysis may be required if: 1) further materials are discovered 2) additional data is required for off-site disposal or suitable for use confirmation 3) H&S of any excavation below hard standing
			End Users	Minor	Unlikely	Very low		
			Office Users	Minor	Unlikely	Very low		
	PAHs, TPHs	Inhalation of Vapour/gases (including Radon)	Site Workers/Gas Maintenance	Minor	Unlikely	Very low	Boosted levels of PAH and TPH identified but at depth, unlikely to be in contact with potential receptors.	
			End Users	Minor	Unlikely	Very low		
			Office Users	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, Asbestos, pH	Ingestion and absorption via direct contact	Site Workers/Gas Maintenance	Minor	Unlikely	Very low	Hardstanding proposed, no risks to end-users.	
			End Users					
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	-	-	-		
			Surface Water	-	-	-		
			Shallow Aquifer	Minor	Unlikely	Very low		
		Direct contact with construction material	Deep Aquifer	-	-	-		
			Buried contaminants	Minor	Unlikely	Very low		
			Buried Services	Minor	Unlikely	Very low		
PAHs, TPHs	Migration of gases via permeable soils	Site Workers/Gas Maintenance	Minor	Unlikely	Very low			
		End Users	Minor	Unlikely	Very low			
		Office Users	Minor	Unlikely	Very low			
		Building and confined spaces	Minor	Unlikely	Very low			
Garage including underground fuel and oil storage On-site source from which potential contamination would have migrated onto the site	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Gas Maintenance				No significant levels of contaminants noted, severity defaults to minor.	No additional investigation considered necessary in this context in light of the proposal for hard standing.
			End Users					
			Office Users					
	PAHs, TPHs	Inhalation of Vapour/gases (including Radon)	Site Workers/Gas Maintenance				Boosted levels of PAH and TPH identified but at depth, unlikely to be in contact with potential receptors.	
			End Users					
			Office Users					
	Metals, Semi-metals and non-metals, PAHs, TPHs, Asbestos, pH	Ingestion and absorption via direct contact	Site Workers/Gas Maintenance				Hardstanding proposed, no risks remaining from this source	
			End Users					
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water					
			Surface Water					
			Shallow Aquifer					
		Direct contact with construction material	Deep Aquifer					
			Buried contaminants					
			Buried Services					
PAHs, TPHs	Migration of gases via permeable soils		Site Workers/Gas Maintenance					
			End Users					
			Office Users					
			Building and confined spaces					

Appendix K.2 Chemical Laboratory Results



4041



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Analytical Report Number : 20-86133

Project / Site name:	Willowdene Close	Samples received on:	11/02/2020
Your job number:	18189	Samples instructed on:	11/02/2020
Your order number:	18198	Analysis completed by:	18/02/2020
Report Issue Number:	1	Report issued on:	18/02/2020
Samples Analysed:	8 soil samples		

Signed:



Zina Abdul Razzak
Senior Quality Specialist

For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Iss No 20-86133-1 Willowdene Close 18189

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 20-86133

Project / Site name: Willowdene Close

Your Order No: 18198

Lab Sample Number	1438585	1438586	1438587	1438588	1438589
Sample Reference	WS1	WS1	WS2	WS2	WS3
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.70	0.80	1.90	1.10
Date Sampled	06/02/2020	06/02/2020	06/02/2020	06/02/2020	06/02/2020
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
Moisture Content	%	N/A	NONE	-	14
Total mass of sample received	kg	0.001	NONE	-	0.80

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	7.8	-	6.9	-
Organic Matter	%	0.1	MCERTS	-	1.6	-	3.8	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	0.28	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	0.65	-	0.39	-
Pyrene	mg/kg	0.05	MCERTS	-	0.65	-	0.35	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.38	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	0.35	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	0.45	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.21	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.41	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	3.39	-	< 0.80	-
-----------------------------	-------	-----	--------	---	------	---	--------	---

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	9.8	-	5.1	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.3	-	1.6	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	29	-	22	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	18	-	4.4	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	52	-	30	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	20	-	9.1	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	41	-	30	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	73	-	34	-

Petroleum Hydrocarbons

TPH Texas (C6 - C8)	mg/kg	0.1	ISO 17025	-	< 0.1	-	< 0.1	-
TPH Texas (C8 - C10)	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH Texas (C10 - C12)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH Texas (C12 - C16)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
TPH Texas (C16 - C21)	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH Texas (C21 - C40)	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH Texas (C6 - C40)	mg/kg	10	NONE	-	< 10	-	< 10	-

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Analytical Report Number: 20-86133

Project / Site name: Willowdene Close

Your Order No: 18198

Lab Sample Number	1438585	1438586	1438587	1438588	1438589
Sample Reference	WS1	WS1	WS2	WS2	WS3
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.70	0.80	1.90	1.10
Date Sampled	06/02/2020	06/02/2020	06/02/2020	06/02/2020	06/02/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		



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Analytical Report Number: 20-86133

Project / Site name: Willowdene Close

Your Order No: 18198

Lab Sample Number	1438590	1438591	1438592		
Sample Reference	WS3	WS4	WS4		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	2.20	0.10	1.90		
Date Sampled	06/02/2020	06/02/2020	06/02/2020		
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	-
Moisture Content	%	N/A	NONE	20	-
Total mass of sample received	kg	0.001	NONE	1.0	-

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		

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.3	-	8.3		
Organic Matter	%	0.1	MCERTS	0.8	-	2.5		

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	0.34		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	0.68		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	0.78		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	6.5		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	2.3		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	8.9		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	7.5		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	4.7		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	2.8		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	4.0		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	2.4		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	4.0		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	2.5		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.56		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	3.2		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	51.1		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	-	11		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	-	0.8		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	-	26		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	3.4	-	36		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	-	130		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	-	19		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	43	-	42		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	-	120		

Petroleum Hydrocarbons

TPH Texas (C6 - C8)	mg/kg	0.1	ISO 17025	< 0.1	-	< 0.1		
TPH Texas (C8 - C10)	mg/kg	10	MCERTS	< 10	-	< 10		
TPH Texas (C10 - C12)	mg/kg	1	MCERTS	< 1.0	-	< 1.0		
TPH Texas (C12 - C16)	mg/kg	4	MCERTS	< 4.0	-	150		
TPH Texas (C16 - C21)	mg/kg	10	MCERTS	< 10	-	890		
TPH Texas (C21 - C40)	mg/kg	10	MCERTS	< 10	-	490		
TPH Texas (C6 - C40)	mg/kg	10	NONE	< 10	-	1500		

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Analytical Report Number: 20-86133

Project / Site name: Willowdene Close

Your Order No: 18198

Lab Sample Number	1438590	1438591	1438592		
Sample Reference	WS3	WS4	WS4		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	2.20	0.10	1.90		
Date Sampled	06/02/2020	06/02/2020	06/02/2020		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		