

APPENDIX 4 – QUALITATIVE RISK ASSESSMENT METHODOLOGY

QUALITATIVE RISK ASSESSMENT METHODOLOGY

The following Contaminated Land Risk Assessment methodology is based on CIRIA C552 (2001) *Contaminated Land Risk Assessment – A Guide to Good Practice*, in order to quantify potential risk via **risk estimation** and **risk evaluation**, which can be adopted at the Phase I stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and therefore is a qualitative approach.

The methodology requires the classification of:

- the magnitude of the **consequence** (severity) of a risk occurring, and
- the magnitude of the **probability** (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at this site are classified in accordance with Table A4.1 below, which is adapted from the CIRIA guidance.

Table A4.1: Classification of Consequence

Classification	Definition of Consequence
Severe	<ul style="list-style-type: none">• Short-term (acute) risks to human health.• Short-term risk of pollution of sensitive water resource or ecosystem.• Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils.
Medium	<ul style="list-style-type: none">• Medium/long-term (chronic) risks to human health.• Medium/long-term risk of pollution of sensitive water resource or ecosystem.• Significant damage to crops/buildings/property/infrastructure (on or off-site).• Contamination of off-site soils.
Mild	<ul style="list-style-type: none">• Easily preventable, permanent health effects on humans.• Pollution of non-sensitive water resources.• Localised damage to crops/buildings/property/infrastructure (on or off-site).
Minor	<ul style="list-style-type: none">• Easily preventable, non-permanent health effects on humans, or no effects.• Minor, low-level and localised contamination of on-site soils.• Easily repairable damage to crops/buildings/property/infrastructure.

The probability of contamination risks occurring at this site will be classified in accordance with Table A4.2 below which is also adapted from the CIRIA guidance. Note that for each category, it is assumed that a pollution linkage exists. Where a pollution linkage does not exist, the likelihood is zero, as is the risk.

Table A4.2: Classification of Probability

Classification	Definition of Probability
High Likelihood	Circumstances are such that an event appears very likely in the short-term or almost inevitable in the long-term; or there is already evidence that such an event has occurred.
Likely	Circumstances are such that such an event is not inevitable, but is possible in the short-term and is likely over the long-term.
Low Likelihood	Circumstances are such that it is by no means certain that an event would occur even over a longer period, and it is less likely in the short-term.
Unlikely	Circumstances are such that it is improbable that an event would occur even in the very long-term.

For each possible pollution linkage (source-pathway-receptor) identified, the potential risk can be evaluated, as presented in Table A3.3. Based upon this, CIRIA C552 presents definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary in each case, as in Table A3.4. These risk categories apply to each possible pollutant linkage, and not simply to each hazard/source of contamination or sensitive receptor.

Table A4.3: Overall Contamination Risk Matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Moderate risk	Low risk
	Low likelihood	Moderate risk	Moderate risk	Low risk	Very low risk
	Unlikely	Low risk	Low risk	Very low risk	Very low risk

Table A4.4: Definition of Risk Categories and Likely Actions Required

Risk Category	Definition and likely actions required
Very high	<ul style="list-style-type: none">• Severe harm to a defined receptor is very likely, or has already occurred.• The risk is likely to result in a substantial liability.• Urgent investigation (if not already undertaken) is likely to be required.• Urgent remediation is likely to be required.
High	<ul style="list-style-type: none">• Harm to a defined receptor is likely.• The risk, if realised, may result in a substantial liability.• Urgent investigation (if not already undertaken) is likely to be required.• Remediation is likely to be required in the long term, possibly sooner.
Moderate	<ul style="list-style-type: none">• Harm to a defined receptor is possible, but severe harm is unlikely.• Investigation is likely to be required to clarify the level of potential liability and risk.• Some remediation may be required in the longer term
Low	<ul style="list-style-type: none">• Harm to a defined receptor is possible, but is likely to be mild at worst.• Liabilities could theoretically arise, but are unlikely.• Further investigation is not required at this stage• Remediation is unlikely to be required.
Very low	<ul style="list-style-type: none">• Harm to a defined receptor is unlikely, and would be minor at worst.• No liabilities are likely to arise.• Further investigation is not required at this stage• Remediation is very unlikely to be required.

APPENDIX 5 – EXPLORATORY HOLE RECORDS



WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

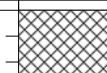

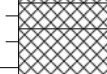

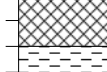

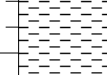

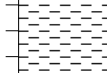

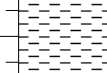

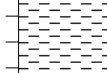

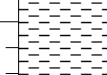

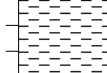

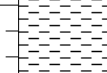

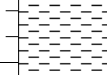

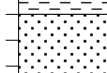





Exploratory Hole No:

WS1

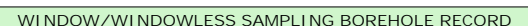
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Client:	Kirsty Mitchell	Ground Level:	
Logged By:	TC,DB,JL	Date Commenced:	27/06/2017
Checked By:	PSw	Date Completed:	27/06/2017
Type and diameter of equipment:	Dando 3 (Modular Window Sampling Rig)	Sheet No:	1 Of 2

Water levels recorded during boring, m						
Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks						
1:						
2:						
3:						
4:						

Sample or Tests										Strata			Strata Description	Installation	
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)			
		75	75	75	75	75	75	N							
P+J	0.20								0.00		0.25		Dark brown sandy slightly gravelly to gravelly clay. Gravel consists of fine to medium flints, occasional brick fragments and root/rootlets (MADE GROUND - TOPSOIL)		
P+J	0.50								0.50		0.35		Stiff dark orange patched green slightly gravelly clay. Gravel consists of fine to medium flints and brick fragments (MADE GROUND)		
											0.70		Light grey slightly gravelly sand. Gravel consists of brick fragments (MADE GROUND)		
S P	1.00	3	2	2	4	4	4	14	1.00				Orange brown high strength sandy CLAY with pockets of weakly cemented sand		
D	1.50								1.50						
S D	2.00	4	5	4	4	6	6	20	2.00						
									2.50						
S D	3.00	6	3	3	6	6	7	22	3.00		3.10				
															
D	3.50								3.50				Medium dense orange brown clayey fine to medium SAND		
											3.90				
S D	4.00	6	5	5	3	4	6	18	4.00				Brown to grey high strength slightly sandy CLAY		
									4.50						
S D	5.00	3	4	5	6	5	4	20	5.00						

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample
Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com



WS1

Project No:	P1019J1129
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Ground Level:

Date Commenced:	27/06/2017
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Date Completed:	27/06/2017
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Sheet No:	2 Of 2
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Water Level after 20mins:

4:

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample
 Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
 T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

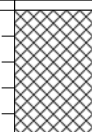


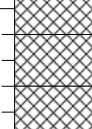

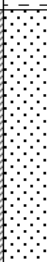
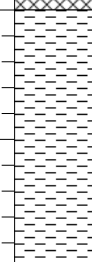


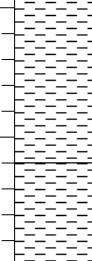


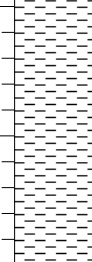
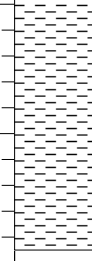

Exploratory Hole No:

WS2

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Client:	Kirsty Mitchell	Ground Level:	
Logged By:	TC,DB,JL	Date Commenced:	27/06/2017
Checked By:	PSw	Date Completed:	27/06/2017
Type and diameter of equipment:	Dando 3 (Modular Window Sampling Rig)	Sheet No:	1 Of 1

Water levels recorded during boring, m						
Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

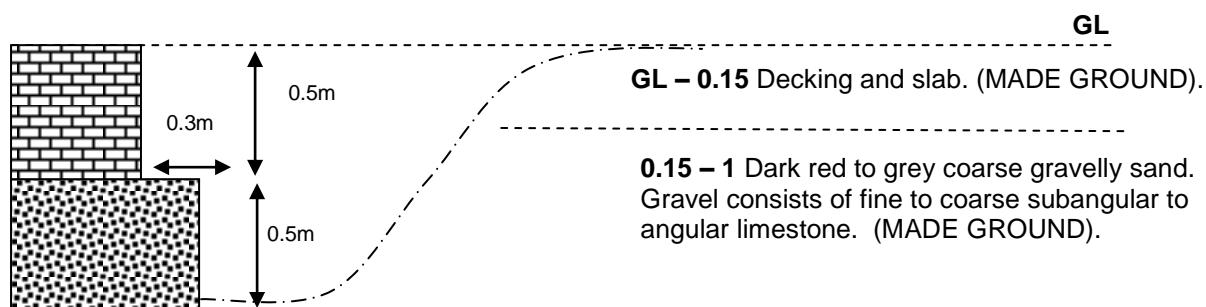
Remarks						
1: Layer of Ironstone at 2.50m. Sampler refused. Carried out SPT at 2.5m which punched though. Carried on drilling.						
2:						
3:						
4:						

Sample or Tests										Strata			Strata Description	Installation	
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)			
		75	75	75	75	75	75	N							
P+J	0.20								0.00				Light brown slightly clayey gravelly sand. Sand is fine grained. Gravel consists of fine to medium flints. Frequent root/rootlets (MADE GROUND - TOPSOIL)		
P+J	0.50								0.50		0.60				
											0.80		Light yellow fine slightly gravelly sand. Gravel consists of fine to medium flints (MADE GROUND)		
S	1.00	3	3	3	3	3	4	13	1.00				Dark grey/brown fine slightly gravelly sand. Gravel consists of occasional brick traces, glass and fine to medium flints (MADE GROUND)		
P											1.00				
D	1.50								1.50				Orange to light brown low to medium strength slightly sandy gravelly CLAY. Gravel consists of fine flints (layer of ironstone from 2.50-2.60. See remarks)		
S	2.00	2	2	1	1	1	1	4	2.00						
D															
S	2.50	5	7	7	5	3	5	20	2.50						
											2.60				
D	3.00								3.00				Orange brown mottled grey medium to very high strength slightly sandy CLAY.		
S	3.50	2	2	2	3	3	4	12	3.50						
D	4.00								4.00						
S	4.50	9	10	10	13	14	15	52	4.50						
D															
									5.00			4.95			

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample
Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

Job No.:	P1019J1129	Issue Date:	July 2017
Project:	Templewood Avenue	Reference:	
Subject:	Foundation Inspection Pit Sketches	Prepared by:	

HTP3 a+b



Unable to find underside of footing due to time restraints.

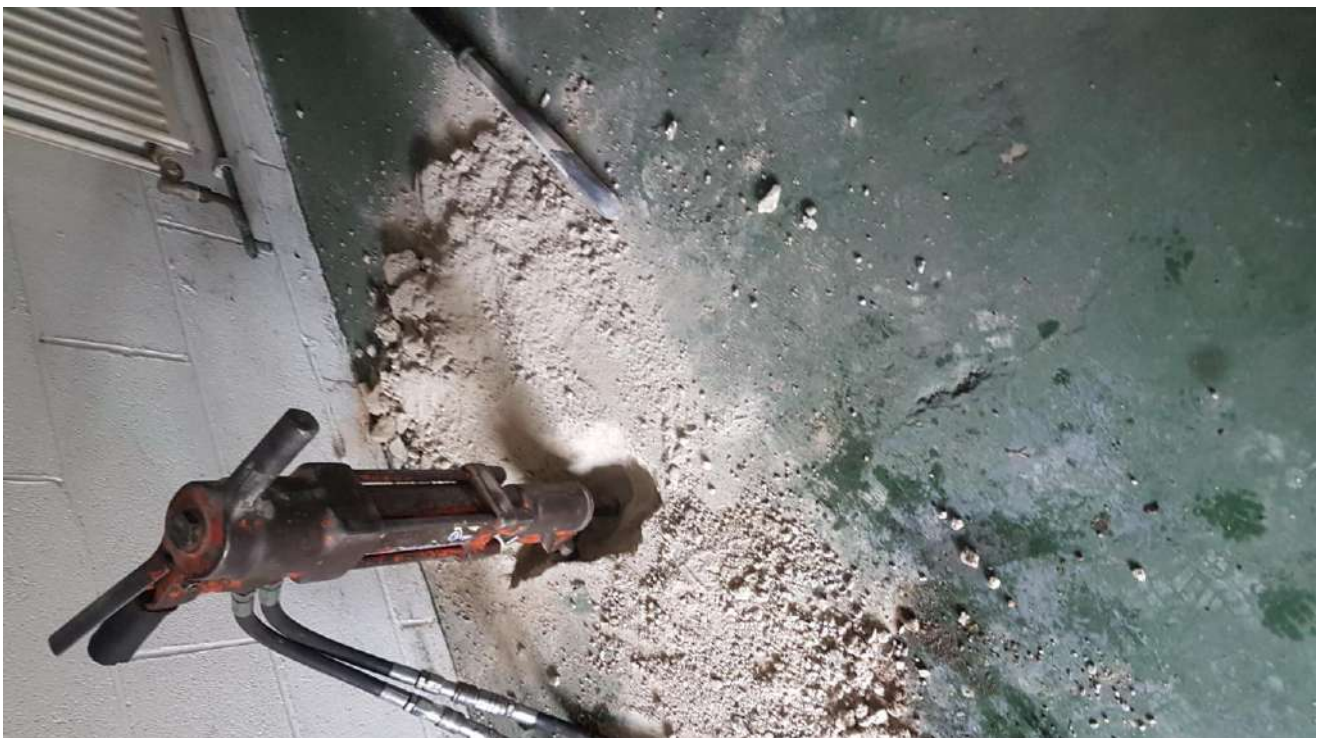


Project Name	Templewood Avenue	Client	Kirsty Mitchell
Title	WS Photo Plan	Project	P1019J1129

Photo 1: HTP2a



Photo 2: HTP2b



Project Name	Templewood Avenue	Client	Kirsty Mitchell
Title	WS Photo Plan	Project	P1019J1129

Photo 3: HTP3**Photo 4: WS1**



Project Name		Client	
Title		Project	

Photo 5: WS2



APPENDIX 6 – CHEMICAL LABORATORY TEST RESULTS

**Emma Hucker**

Jomas Associates Ltd
Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: Jomas Group

Analytical Report Number : 17-53890

Replaces Analytical Report Number : 17-53890, issue no. 1

Project / Site name:	35 Templewood Avenue, London NW3 7UY	Samples received on:	28/06/2017
Your job number:	JJ1129	Samples instructed on:	06/07/2017
Your order number:	P1019JJ1129.3	Analysis completed by:	10/08/2017
Report Issue Number:	2	Report issued on:	10/08/2017
Samples Analysed:	7 soil samples		

Signed:

Dr Irma Doyle
Senior Account 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.

Analytical Report Number: 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

Your Order No: P1019JJ1129.3

Lab Sample Number				779621	779622	779623	779624	779625
Sample Reference				HTP3	WS2	WS1	WS1	WS1
Sample Number				P	P+J	P+J	P	D
Depth (m)				0.20	0.50	0.50	1.00	4.00
Date Sampled				27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
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	%	N/A	NONE	4.2	4.6	10	9.9	10
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.0	0.88	0.71

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	0.017	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	0.017	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.2	8.0	7.9	8.0	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	890	2000	24000	1800	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	330
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	53.1	973	1860	260	164
Water Soluble SO ₄ as SO ₄ (2:1) Gallery 16h extraction	g/l	0.00125	MCERTS	0.0531	0.973	1.86	0.260	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.2	0.8	-	-	-

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	0.10	0.75	0.18	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	0.14	1.6	0.28	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	0.13	1.4	0.27	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.75	0.20	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.98	0.21	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.98	0.17	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.69	0.17	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.94	0.18	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.60	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.13	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.60	< 0.05	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	9.45	1.66	< 0.80	-
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Analytical Report Number: 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

Your Order No: P1019JJ1129.3

Lab Sample Number				779621	779622	779623	779624	779625
Sample Reference				HTP3	WS2	WS1	WS1	WS1
Sample Number				P	P+J	P+J	P	D
Depth (m)				0.20	0.50	0.50	1.00	4.00
Date Sampled				27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.9	10	20	9.5	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.7	0.7	1.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.4	< 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	9.3	26	28	32	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	56	45	35	9.4	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	50	190	1000	39	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.7	1.0	0.6	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.3	14	14	8.0	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	150	88	37	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - 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	11	8.4	< 1.0	-
TPH (C21 - C40)	mg/kg	10	MCERTS	< 10	46	13	< 10	-

Analytical Report Number: 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

Your Order No: P1019JJ1129.3

Lab Sample Number				779626	779627			
Sample Reference				WS2	WS2			
Sample Number				D	D			
Depth (m)				1.50	3.00			
Date Sampled				27/06/2017	27/06/2017			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	6.9	14			
Total mass of sample received	kg	0.001	NONE	0.43	0.64			

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-			
Asbestos in Soil	Type	N/A	ISO 17025	-	-			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-			
Asbestos Quantification Total	%	0.001	ISO 17025	-	-			

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.0	6.3			
Total Cyanide	mg/kg	1	MCERTS	-	-			
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-			
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	82	68			
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	40.8	34.1			
Water Soluble SO ₄ as SO ₄ (2:1) Gallery 16h extraction	g/l	0.00125	MCERTS	-	-			
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-			

Total Phenols

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

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

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-			
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Analytical Report Number: 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

Your Order No: P1019JJ1129.3

Lab Sample Number				779626	779627			
Sample Reference				WS2	WS2			
Sample Number				D	D			
Depth (m)				1.50	3.00			
Date Sampled				27/06/2017	27/06/2017			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-			
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-			
TPH (C10 - C12)	mg/kg	2	MCERTS	-	-			
TPH (C12 - C16)	mg/kg	4	MCERTS	-	-			
TPH (C16 - C21)	mg/kg	1	MCERTS	-	-			
TPH (C21 - C40)	mg/kg	10	MCERTS	-	-			



Analytical Report Number: 17-53890
Project / Site name: 35 Templewood Avenue, London NW3 7UY
Your Order No: P1019JJ1129.3

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 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
779622	WS2	0.50	160	Loose Fibres & Loose Fibrous Debris	Chrysotile	0.017	0.017

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



Analytical Report Number : 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

* 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 *
779621	HTP3	P	0.20	Brown gravelly loam.
779622	WS2	P+J	0.50	Light Brown clay and sand with gravel and clinker.
779623	WS1	P+J	0.50	Light brown clay and sand with gravel and chalk.
779624	WS1	P	1.00	Light brown clay and sand.
779625	WS1	D	4.00	Light brown clay and sand.
779626	WS2	D	1.50	Light brown clay and sand.
779627	WS2	D	3.00	Light brown sandy clay.

Analytical Report Number : 17-53890

Project / Site name: 35 Templewood Avenue, London NW3 7UY

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

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
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in ouse method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	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
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-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
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
Sulphate, water soluble, in soil by Gallery 16hr	Determination of water soluble Sulphate by discrete analyser (precipitation method).	In house method based on BS1377-3: 1990.	L082B-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
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-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.

Iss No 17-53890-2 35 Templewood Avenue, London NW3 7UY JJ1129

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The results included within the report are representative of the samples submitted for analysis.

Page 8 of 9

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
HTP3	P	S	17-53890	779621	b	Monohydric phenols in soil	L080-PL	b
HTP3	P	S	17-53890	779621	b	PRO (Soil)	L088-PL	b
HTP3	P	S	17-53890	779621	b	Speciated EPA-16 PAHs in soil	L064-PL	b
HTP3	P	S	17-53890	779621	b	TPH in (Soil)	L076-PL	b
WS1	P	S	17-53890	779624	b	Monohydric phenols in soil	L080-PL	b
WS1	P	S	17-53890	779624	b	PRO (Soil)	L088-PL	b
WS1	P	S	17-53890	779624	b	Speciated EPA-16 PAHs in soil	L064-PL	b
WS1	P	S	17-53890	779624	b	TPH in (Soil)	L076-PL	b
WS1	P+J	S	17-53890	779623	b	Monohydric phenols in soil	L080-PL	b
WS1	P+J	S	17-53890	779623	b	PRO (Soil)	L088-PL	b
WS1	P+J	S	17-53890	779623	b	Speciated EPA-16 PAHs in soil	L064-PL	b
WS1	P+J	S	17-53890	779623	b	TPH in (Soil)	L076-PL	b
WS2	P+J	S	17-53890	779622	b	Monohydric phenols in soil	L080-PL	b
WS2	P+J	S	17-53890	779622	b	PRO (Soil)	L088-PL	b
WS2	P+J	S	17-53890	779622	b	Speciated EPA-16 PAHs in soil	L064-PL	b
WS2	P+J	S	17-53890	779622	b	TPH in (Soil)	L076-PL	b



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e: Jomas Group

Analytical Report Number : 17-53892

Project / Site name:	35 Templewood Avenue, London NW3 7UY	Samples received on:	28/06/2017
Your job number:	JJ1129	Samples instructed on:	06/07/2017
Your order number:	P1019JJ1129.3	Analysis completed by:	13/07/2017
Report Issue Number:	1	Report issued on:	13/07/2017
Samples Analysed:	1 WAC 10:1 Sample		

Signed:

Dr Irma Doyle
Senior Account 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.

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Waste Acceptance Criteria Analytical Results							
Report No:	17-53892						
					Client: JOMASASSOC		
Location	35 Templewood Avenue, London NW3 7UY						
Lab Reference (Sample Number)	779631 / 779632				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	27/06/2017				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS2 P+J						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.3				3%	5%	6%
Loss on Ignition (%) **	3.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	16				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	2.1				--	To be evaluated	To be evaluated
Eluate Analysis					Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:01	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
	mg/l			mg/kg			
Arsenic *	0.0103			0.0864	0.5	2	25
Barium *	0.0294			0.247	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0034			0.028	0.5	10	70
Copper *	0.019			0.16	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0028			0.0231	0.5	10	30
Nickel *	0.0016			0.014	0.4	10	40
Lead *	0.018			0.15	0.5	10	50
Antimony *	0.0030			0.026	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0092			0.077	4	50	200
Chloride *	0.67			5.6	800	4000	25000
Fluoride	0.26			2.2	10	150	500
Sulphate *	6.8			57	1000	20000	50000
TDS	42			360	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	< 0.100			< 1.00	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.74						
Dry Matter (%)	94						
Moisture (%)	6.3						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = UKAS accredited (liquid eluate analysis only)			
				** = MCFRTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Analytical Report Number : 17-53892

Project / Site name: 35 Templewood Avenue, London NW3 7UY

* 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 *
779631	WS2	P+J	1.00	Brown clay and sand with gravel and glass.

Analytical Report Number : 17-53892

Project / Site name: 35 Templewood Avenue, London NW3 7UY

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance"	L046-UK	W	NONE
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 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	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests"	L009-PL	D	MCERTS



Analytical Report Number : 17-53892

Project / Site name: 35 Templewood Avenue, London NW3 7UY

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

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.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS2	P+J	S	17-53892	779631	b	BTEX in soil (Monoaromatics)	L073B-PL	b
WS2	P+J	S	17-53892	779631	b	Mineral Oil (Soil) C10 - C40	L076-PL	b
WS2	P+J	S	17-53892	779631	b	PCB's By GC-MS in soil	L027-PL	b
WS2	P+J	S	17-53892	779631	b	Speciated WAC-17 PAHs in soil	L064-PL	b
WS2	P+J	S	17-53892	779631	b	Total BTEX in soil (Poland)	L073-PL	b

APPENDIX 7 – GEOTECHNICAL LABORATORY TEST RESULTS



TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.3 & 5: Definitive Method

Client: Jomas Associates Ltd
Client Address: Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD
Contact: Emma Hucker
Site Name: 35 Templewood Avenue, London
Site Address: 35 Templewood Avenue, London

Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

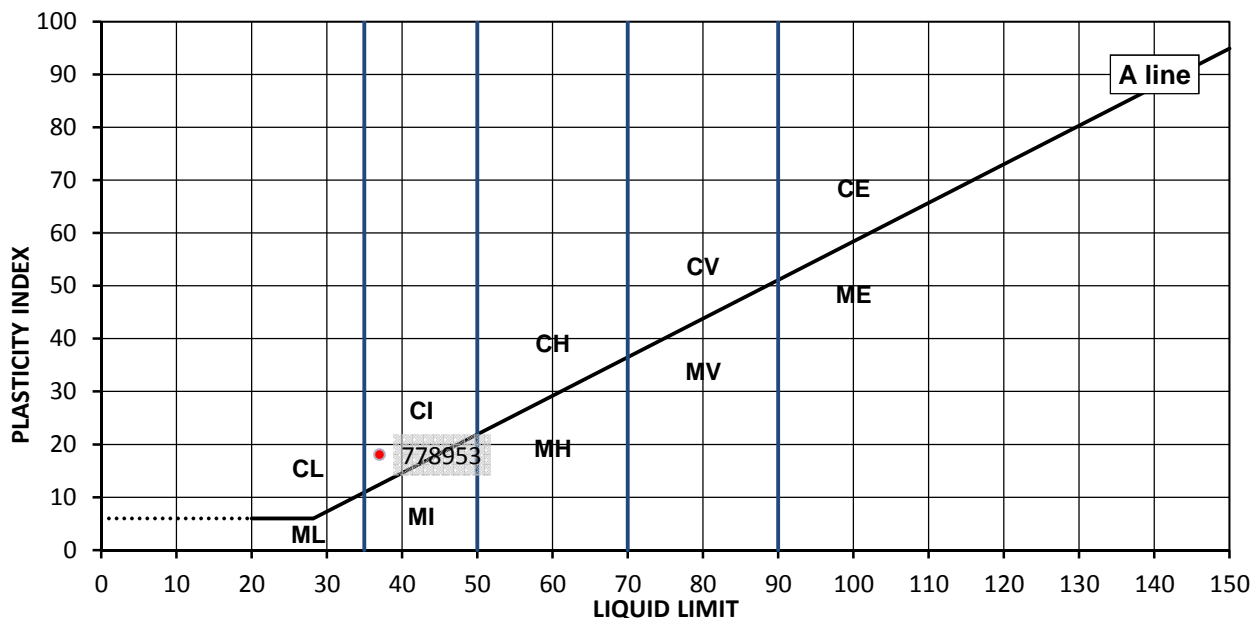
TEST RESULTS

Laboratory Reference: 778953
Sample Reference: Not Given

Description: Light brown slightly gravelly sandy CLAY
Location: WS2
Sample Preparation: Tested after washing to remove >425um

Sample Type: D
Depth Top [m]: 1.5
Depth Base [m]: Not Given

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
11	37	19	18	96



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 20/07/2017

for and on behalf of i2 Analytical Ltd

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The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."



TEST CERTIFICATE

Determination of Liquid and Plastic Limits

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Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.3 & 5: Definitive Method

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Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

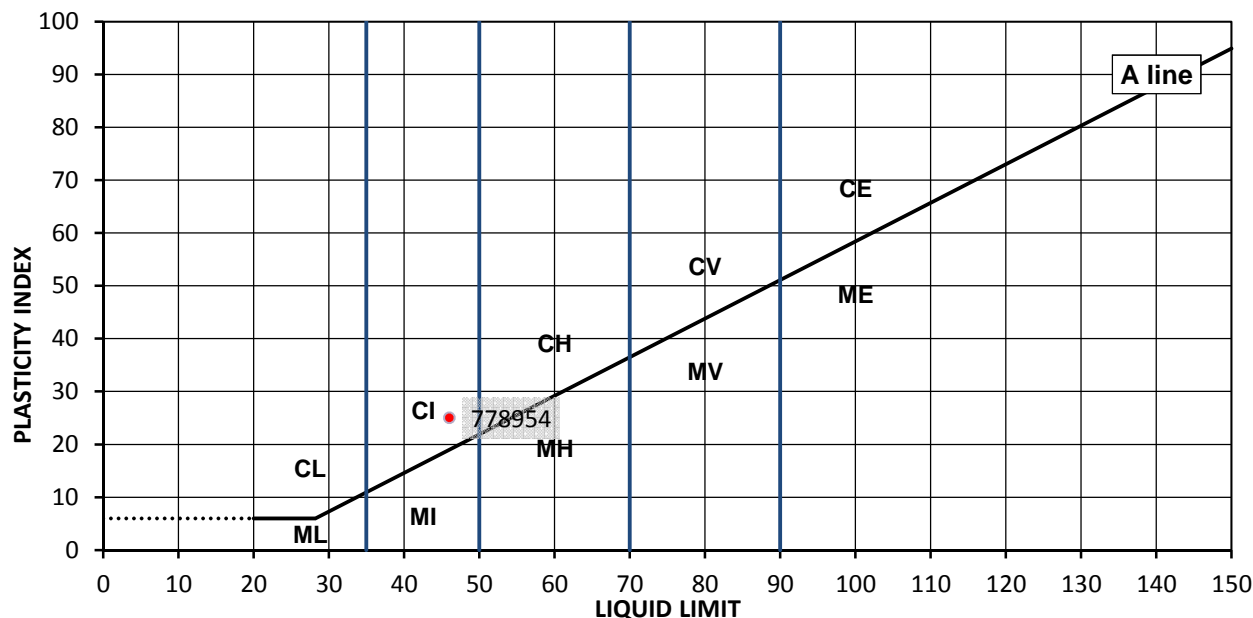
TEST RESULTS

Laboratory Reference: 778954
Sample Reference: Not Given

Description: Mottled brown slightly sandy CLAY
Location: WS2
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 4
Depth Base [m]: Not Given

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
25	46	21	25	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 20/07/2017

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



4041

Tested in Accordance with BS1377-2: 1990: Clause 4.3 & 5: Definitive Method

Client: Jomas Associates Ltd
Client Address: Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD
Contact: Emma Hucker
Site Name: 35 Templewood Avenue, London
Site Address: 35 Templewood Avenue, London

Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

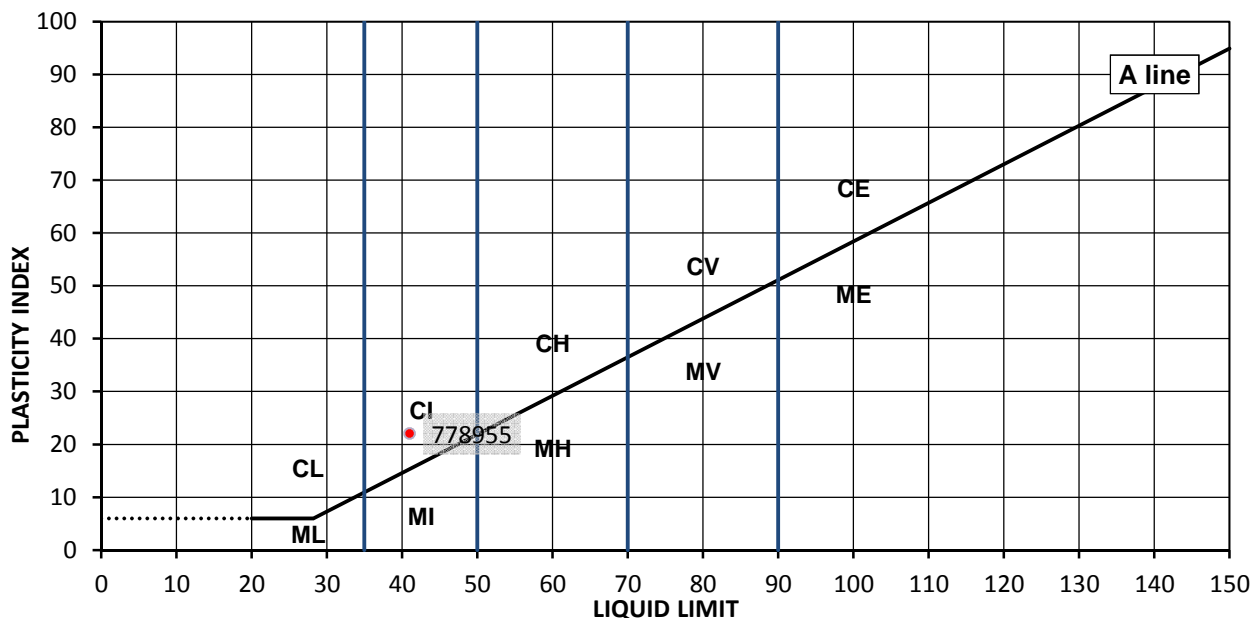
TEST RESULTS

Laboratory Reference: 778955
Sample Reference: Not Given

Description: Mottled brown sandy CLAY
Location: WS1
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 2
Depth Base [m]: Not Given

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
11	41	19	22	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 20/07/2017

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Liquid and Plastic Limits

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377-2: 1990: Clause 4.3 & 5: Definitive Method

Client: Jomas Associates Ltd
Client Address: Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD
Contact: Emma Hucker
Site Name: 35 Templewood Avenue, London
Site Address: 35 Templewood Avenue, London

Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

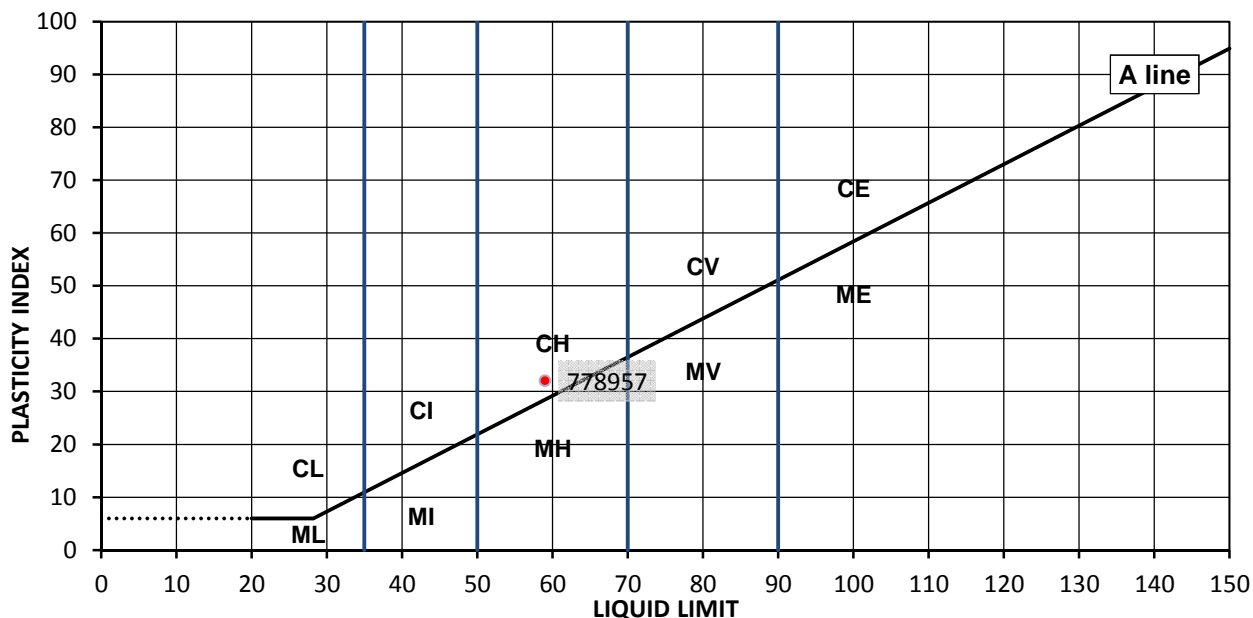
TEST RESULTS

Laboratory Reference: 778957
Sample Reference: Not Given

Description: Yellowish brown slightly sandy CLAY
Location: WS1
Sample Preparation: Tested in natural condition

Sample Type: D
Depth Top [m]: 5
Depth Base [m]: Not Given

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	59	27	32	100



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	below 35
M	Silt	35 to 50
	L	Low
	I	Medium
	H	High
	V	Very high
	E	Extremely high
Organic	O	append to classification for organic material (eg CHO)

Remarks

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/07/2017

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: Jomas Associates Ltd
Client Address: Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD
Contact: Emma Hucker
Site Name: 35 Templewood Avenue, London
Site Address: 35 Templewood Avenue, London

Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	Density		M/C	Atterberg				PD
		Reference	Top depth [m]	Base depth [m]	Type		bulk	dry		% Passing 425um	LL	PL	PI	
							Mg/m3	Mg/m3		%	%	%	%	
778955	WS1	Not Given	2.00	Not Given	D	Mottled brown sandy CLAY			11	100	41	19	22	
778957	WS1	Not Given	5.00	Not Given	D	Yellowish brown slightly sandy CLAY			29	100	59	27	32	
778953	WS2	Not Given	1.50	Not Given	D	Light brown slightly gravelly sandy CLAY			11	96	37	19	18	
778954	WS2	Not Given	4.00	Not Given	D	Mottled brown slightly sandy CLAY			25	100	46	21	25	

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/07/2017

Signed:

Sushil Sharda
Technical Manager (Geotechnical
Division)

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

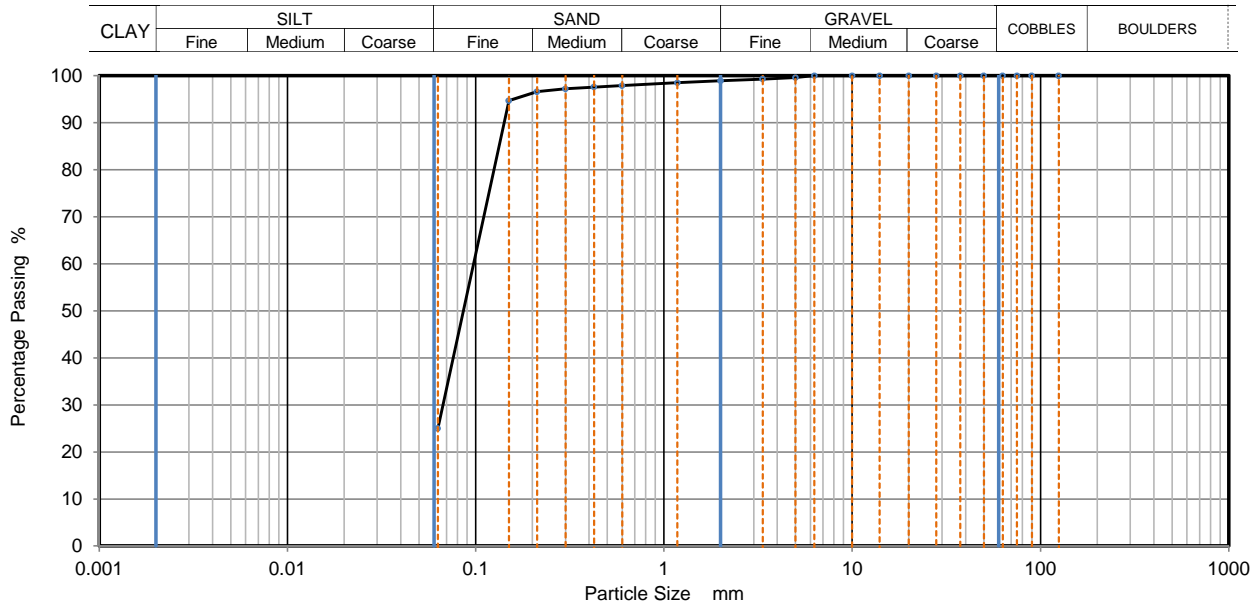
Client: Jomas Associates Ltd
Client Address: Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD
Contact: Emma Hucker
Site Name: 35 Templewood Avenue, London
Site Address: 35 Templewood Avenue, London

Client Reference: JJ1129
Job Number: 17-53793
Date Sampled: Not Given
Date Received: 28/06/2017
Date Tested: 12/07/2017
Sampled By: Not Given

TEST RESULTS

Laboratory Reference: 778956
Sample description: Light brown clayey SAND
Location: WS1
Supplier: Not Given

Sample Reference: Not Given
Sample Type: D
Depth Top [m]: 3.5
Depth Base [m]: Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	98	Particle density (assumed) 2.65 Mg/m ³	
0.425	98		
0.3	97		
0.212	97		
0.15	95		
0.063	25		

Dry Mass of sample [g]: 215

Sample Proportions		% dry mass
Very coarse		0.00
Gravel		1.10
Sand		73.90
Fines <0.063mm		25.00

Grading Analysis		
D100	mm	6.3
D60	mm	0.0974
D30	mm	0.0671
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Sushil Sharda
Technical Manager
(Geotechnical Division)

Date Reported: 20/07/2017

for and on behalf of i2 Analytical Ltd

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APPENDIX 8 – SOIL GAS MONITORING TEST RESULTS

GAS AND GROUNDWATER MONITORING BOREHOLE RECORD SHEET					
Site: Templewood Avenue	Operative(s): AJH	Date: 03/07/17	Time: 12:00	Round: 1	Page: 1
MONITORING EQUIPMENT					
Instrument Type	Instrument Make	Serial No.	Date Last Calibrated		
Analox	GA5000		07/10/2016		
PID	Phocheck tiger		20/05/2016		
Dip Meter	GeoTech				
MONITORING CONDITIONS					
Weather Conditions: Overcast		Ground Conditions: Dry		Temperature: 21 °C	
Barometric Pressure (mbar): 1007		Barometric Pressure Trend (24hr): Steady		Ambient Concentration: 0.1 %CH ₄ , 0.1 %CO ₂ , 20.2 %O ₂	

MONITORING RESULTS													
Monitoring Point Location	Flow		Atmospheric Pressure (mbar)	Methane %	Methane % LEL	Carbon Dioxide %	Oxygen %	VOC (ppm)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (mbgl)	Depth to Base of well (mbgl)
	Peak	Average						Peak	Average				
WS1	0.0	0.0	1007	0.1	/	1.0	19.8	40	20	0	0	DRY	4.89
WS2	+0.3	+0.3	1007	0.1	/	0.9	19.8	51	20	0	0	DRY	4.56

GAS AND GROUNDWATER MONITORING BOREHOLE RECORD SHEET					
Site: Templewood Avenue	Operative(s): JWT	Date: 10/07/17	Time: 10:45	Round: 2	Page: 1
MONITORING EQUIPMENT					
Instrument Type	Instrument Make	Serial No.	Date Last Calibrated		
Analox	GA5000		07/10/2016		
PID	Phocheck tiger		20/05/2016		
Dip Meter	GeoTech				
MONITORING CONDITIONS					
Weather Conditions: Sunny		Ground Conditions: Dry		Temperature: 24 °C	
Barometric Pressure (mbar): 996		Barometric Pressure Trend (24hr): Falling		Ambient Concentration: 0.1 %CH ₄ , 0.1 %CO ₂ , 20.7 %O ₂	

MONITORING RESULTS													
Monitoring Point Location	Flow		Atmospheric Pressure (mbar)	Methane %	Methane % LEL	Carbon Dioxide %	Oxygen %	VOC (ppm)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (mbgl)	Depth to Base of well (mbgl)
	Peak	Average						Peak	Average				
WS1	+0.5	+0.5	995	0.0	/	1.2	19.8	11	8	0	0	DRY	4.89
WS2	+0.4	+0.4	996	0.0	/	0.6	20.2	9	7	0	0	DRY	4.56

GAS AND GROUNDWATER MONITORING BOREHOLE RECORD SHEET					
Site: Templewood Avenue	Operative(s): JWT	Date: 19/07/17	Time: 13:40	Round: 3	Page: 1
MONITORING EQUIPMENT					
Instrument Type	Instrument Make	Serial No.	Date Last Calibrated		
Analox	GA5000		07/10/2016		
PID	Phocheck tiger		20/05/2016		
Dip Meter	GeoTech				
MONITORING CONDITIONS					
Weather Conditions: Overcast		Ground Conditions: Damp		Temperature: 21 °C	
Barometric Pressure (mbar): 993		Barometric Pressure Trend (24hr): Falling then steady		Ambient Concentration: 0.0 %CH ₄ , 0.1 %CO ₂ , 21.1 %O ₂	

MONITORING RESULTS													
Monitoring Point Location	Flow		Atmospheric Pressure (mbar)	Methane %	Methane % LEL	Carbon Dioxide %	Oxygen %	VOC (ppm)		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to water (mbgl)	Depth to Base of well (mbgl)
	Peak	Average						Peak	Average				
WS1	+0.1	+0.1	993	0.0	/	1.7	19.5	1	1	0	0	DRY	4.89
WS2	0.0	0.0	994	0.0	/	0.9	20.0	1	0	0	0	DRY	4.56