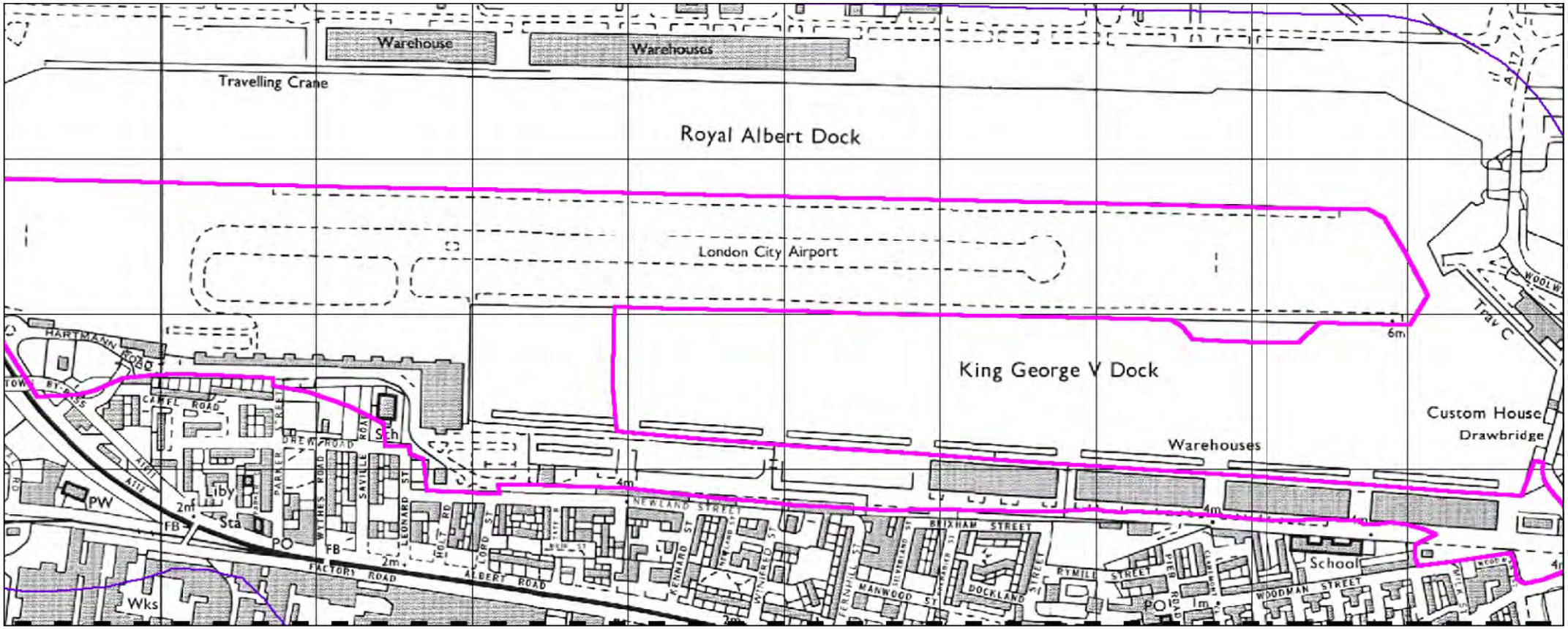


Key:

Wider Airport Site

RPS
35 New Bridge Street, London EC4V 6BW
T 020 7280 3240 F 020 7283 9248 W www.rpsgroup.com

Client: London City Airport
Project: CADP 1
Title: Historical Map Extract - 1991

Date: Oct 2017
Figure: 4

Scale: NTS
Rev: 00

APPENDIX A

General Notes

RPS HEALTH, SAFETY & ENVIRONMENT

Phase 1 - Environmental Risk Assessment / Desk Study Environmental Review

General Notes

1. A "desk study" means that no site visits have been carried out as any part thereof, unless otherwise specified.
2. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the Client.
3. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources.
4. The accuracy of maps cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
5. No sampling or analysis has been undertaken in relation to this desk study.
6. Any borehole data from British Geological Survey sources is included on the basis that: "The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation".
7. Where any data supplied by the Client or from other sources, including that from previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.
8. This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
9. The copyright in the written materials shall remain the property of the RPS Company but with a royalty-free perpetual licence to the Client deemed to be granted on payment in full to the RPS Company by the Client of the outstanding amounts.
10. The report is provided for sole use by the Client and is confidential to them, their professional advisors, no responsibility whatsoever for the contents of the report will be accepted to any person other than the Client. [Unless otherwise agreed]
11. These terms apply in addition to the RPS HSED "Standard Terms & Conditions" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms & Conditions the said Standard Terms & Conditions shall prevail.) In the absence of such a written contract the Standard Terms & Conditions will apply.

RPS HEALTH, SAFETY & ENVIRONMENT

Phase 2 – Site Investigations

General Notes

1. The assessments made in this report are based on the ground conditions as revealed by intrusive investigations, together with the results of any field or laboratory testing or chemical analysis undertaken and other relevant data which may have been obtained including previous site investigations. In any event, ground contamination often exists as small discrete areas of contamination ("hot spots") and there can be no certainty that any or all such areas have been located and/or sampled.

2. There may be special conditions appertaining to the site which have not been taken into account in the report. The assessment may be subject to amendment in the light of additional information becoming available.

3. Where any data supplied by the Client or from other sources, including that from previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by RPS Companies for inaccuracies within the data supplied by other parties.

4. Whilst the report may express an opinion on possible ground conditions between or beyond trial pit or borehole locations, or on the possible presence of features based on either visual, verbal or published evidence this is for guidance only and no liability can be accepted for the accuracy thereof.

5. Comments on groundwater conditions are based on observations made at the time of the investigation unless otherwise stated. Groundwater conditions may vary due to seasonal or other effects.

6. This report is prepared and written in the context of the agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or part after its original submission.

7. The copyright in the written materials shall remain the property of the RPS Company but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to the RPS Company by the client of the outstanding amounts.

8. The report is provided for sole use by the Client and is confidential to them and their professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the Client.

9. These terms apply in addition to the RPS Group "Standard Terms of Business" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms of Business the said Standard Terms of Business shall prevail). In the absence of such a written contract the Standard Terms of Business will apply.

APPENDIX B

Environment Agency Correspondence

creating a better place

Environment Agency

Mr Tim Halley
London City Airport Ltd

Tim.Halley@londoncityairport.com

Our ref: NE/2017/126435/02-L01
Your ref: 13/01228/FUL

Date: 23 February 2017

Dear Mr Halley

Review of documents to satisfy conditions 39, 66, 68 and 69 of planning permission 13/01228/FUL.

London City Airport, Hartmann Road, Silvertown, London, E16 2PX

Thank you for contacting the Environment Agency.

As requested, we have reviewed submitted documents relating to planning conditions 39, 66 and 69 prior to their formal submission. We have not yet received documents relating to condition 68.

Condition 39 – Contamination Report
In our assessment we have reviewed the following report:

- *Contaminated Land Assessment and Outline Remediation Strategy for London City Airport (RPS ref: HLEI45199 dated November 2016)*

The objective of the report is to provide information to support the discharge of Part a) and Part b) of Condition 39 for the 'interim works' area only. We have reviewed the report and generally agree with the site conceptualisation and the outline remediation strategy. To improve our understanding of the site we request that the formal submission is accompanied by additional information or clarification.

- Please include the historical map extracts for the proposed development area for review.
- Please clarify the hydrogeological conceptualisation:
  - Do you have groundwater elevation data and the elevation of the water level in the docks?
  - Section 6.6 provides a reference indicating that the King George V dock is concrete lined and concludes that it is likely that the Albert and Victoria docks are as well. Do you have any additional information to support this or further information regarding the construction of the docks?
  - Do you have any additional information regarding the rate of loss of water from the docks and how levels are managed by RoDMA?
- Section 8 – Please provide additional detail regarding the process that will be utilised during the watching brief for previously unidentified contamination (i.e. identification of contamination, assessment, isolation, remediation and re use/disposal.

Based on the information provided we do not foresee any issues with recommending

Cont/d..

the discharge of Part a) and Part b) of Condition 39 assuming that any additional information provided to supports the site conceptualisation and remediation strategy provided in the current report.

Condition 66 – (Non-Return Water Valve)
Based on the information submitted, *City Airport Development Programme (CADP1) Pre-commencement Condition 66: Non Return Water Valve and Sustainable Urban Drainage*, dated 17 January 2017, we would have no objection to the discharge of condition 66.

Condition 69 – (SuDS)
Following a review of the submitted documents we would have no objections to condition 69 (SuDS) being discharged for Phase 1 (Interim Works) only. Documents should be formally submitted, as presented, to the Local Planning Authority.

A suitable Surface Water Drainage Scheme has been submitted in support of Phase 1 (Interim Works). The Interim Works drainage scheme will achieve a 5% reduction in flow for the areas being developed within this phase, with the intention of still achieving the approved 63% reduction of flows across the site following completion of Phase 2 (Completed Works).

If you have any questions please contact me on 0203 025 5486 or email me at HNLSustainablePlaces@environment-agency.gov.uk, quoting the reference at the beginning of this letter.

Yours sincerely

Mr Andy Goymer
Planning Advisor

Telephone: 0203 025 5486
E-mail: HNLSustainablePlaces@environment-agency.gov.uk
Address: Environment Agency, Ergon House, Horseferry Road, London SW1P 2AL

End

creating a better place

Environment Agency

Dave Whittaker
London Borough of Newham

Dave.whittaker@newham.gov.uk

Our ref: NE/2017/126729/01-L01
Your ref: 17/00975/AOD

Date: Friday 7 April 2017

Dear . Whittaker

Approval of details pursuant to condition 39 attached to planning consent 13/01228/FUL, dated 26/7/16.

London City Airport, Hartmann Road, Silvertown, London, E16 2PX.

Thank you for submitting the following information relating to the proposed redevelopment of London City Airport:

- *City Airport Development Programme (CADP1) Condition 39: Contamination (RPS ref: HLEI45199/001R dated March 2017)*

We are unable to recommend the discharge of condition 39 at this time and request further information be submitted.

The information presented in this report supports the previously presented site conceptualisation with respect to potential risks to controlled waters during the redevelopment works based on historic site investigation data.

The included piling risk assessments indicate that the potential for cross-contamination of the aquifer units that underlie the site has been considered and will be managed during the works. However, we note that Appendix G includes reference to contaminated sediment within the base of King George V Dock identified during site investigation works completed between November 2016 and February 2017. This is the first information that we have received with respect to the presence of contaminated sediment within the dock itself and we request for the applicant to provide the following additional information:

- An assessment of the potential risk presented to controlled waters by the presence of the identified contaminated sediment within the dock;
- Risk assessments and method statements for the management and monitoring of the contaminated sediment during the proposed works. We are mindful that the proposed piling works (and potentially subsequent construction phases) could potentially result in the mobilisation of sediment towards other controlled water bodies down gradient of King George V Dock such as the River Thames; and,
- A remediation or risk mitigation strategy for the identified contaminated sediment to be employed during the works.

Cont/d..

INVESTOR IN PEOPLE

If you have any questions please contact me on 0203 025 5486 or email me at HNLSustainablePlaces@environment-agency.gov.uk, quoting the reference at the beginning of this letter.

Yours sincerely

Mr Andy Goymer
Planning Advisor

Telephone: 0203 025 5486
E-mail: HNLSustainablePlaces@environment-agency.gov.uk
Address: Environment Agency, Ergon House, Horseferry Road, London, SW1P 2AL

End

APPENDIX C

Exploratory Hole Logs

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods Cable Percussion 150 mm diameter from 0.00m to 22.80m.	Ground Level -5.15 m OD National Grid Coordinates E 542438.56 N 180333.51	

Samples and Tests

Depth	Type & No.	Records	Date / Time Casing / Water
			08/03/2001 0.00 0.00
0.00 - 0.09	D1	S,SW = 30 1 for 60mm,	
0.00 - 0.90	B2		
0.75 - 0.85	D3		
1.50 - 1.71	D4	S,SW = 30,3 1 for 30mm,/1,2	1.50
1.50 - 2.00	B5		
2.30 - 2.75	D6	C,N=8 1,2/1,3,2,2	2.30
2.30 - 2.80	B7		
3.05 - 3.15	D8		
3.80 - 4.25	D9	C,N=5 2,3/2,1,1,1	3.80
3.80 - 4.30	B10		
4.55 - 4.65	D11		
5.30 - 5.75	D12	C,N=27 2,1/2,3,8,14	5.30
5.30 - 5.80	B13		
5.80 - 6.05	D14	C,50 12,13 for 25mm/39,11	5.80
5.80 - 6.30	B15		
6.55 - 6.65	D16		
7.30 - 7.48	D17	S,50 13,12 for 20mm/39,11 for 10mm	7.30
7.30 - 7.80	B18		
8.05 - 8.15	D19		
8.80 - 8.97	D20	S,50 15,10 for 15mm/41,9 for 5mm	8.80
8.80 - 9.30	B21		
9.55 - 9.65	D22		

Strata

Description	Depth,Level (Thickness)
Very soft dark grey black SILT. (ALLUVIUM)	(1.90) 1.90 --7.05
Loose becoming medium dense dark grey slightly silty sandy to very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of flint with rare subrounded cobbles of flint. (RIVER TERRACE DEPOSITS)	(3.80)
Becomes a gravelly sand with depth. Gravel is subrounded to rounded fine and medium of flint. Sand is fine to coarse.	5.70 --10.85
Very dense dark green grey fine SAND. (THANET BEDS)	(11.60)

Legend: b

Groundwater
No. Struck Behaviour

Remarks
1. Borehole drilled over 11.30m of water.
2. Water added to assist drilling.
Hole backfill : 0.00m to 22.80m Bentonite (b).

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1085

Borehole BH104
Sheet 1 of 3

31/10/2001 10:04:43 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level National Grid Coordinates	-5.15 m OD E 542438.56 N 180333.51

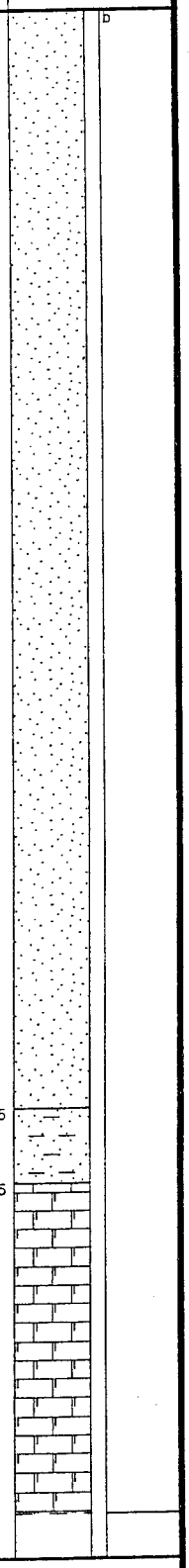
Samples and Tests

Depth	Type & No.	Records	Date Casing	Time Water
10.30 - 10.48	D23	S,50 17,8 for 15mm/37,13 for 15mm	10.30	
10.30 - 10.80	B24			
10.80 - 10.90	D25			
11.30 - 11.56	D26	C,50 11,14 for 30mm/40,10 for 10mm	11.30	
11.30 - 11.80	B27			
11.80 - 11.90	D28			
12.30 - 12.46	D29	C,50 14,11 for 20mm/39 for 50mm,11 for 10mm	12.30	
12.30 - 12.80	B30			
12.80 - 12.90	D31			
			09/03/2001 13.30	
13.30 - 13.48	D32	C,50 17,8 for 15mm/41,9 for 10mm	13.30	
13.30 - 13.80	B33			
13.80 - 13.90	D34			
14.30 - 14.45	D35	C,50 18,7 for 15mm/44 for 50mm,6 for 5mm	14.30	
14.30 - 14.80	B36			
14.80 - 14.90	D37			
15.30 - 15.46	D38	C,50 20,5 for 5mm/44,6 for 5mm	15.30	
15.30 - 15.80	B39			
15.80 - 15.90	D40			
16.30 - 16.47	D41	C,50 20,5 for 5mm/42,8 for 10mm	16.30	
16.30 - 16.80	B42			
16.80 - 16.90	D43			
17.30 - 17.52	D44	C,50 18,7 for 25mm/30,20 for 40mm	17.30	
17.30 - 17.80	B45			
17.80 - 17.85	B46	C,25 25 for 30mm,/25 for 20mm	17.80	
18.30 - 18.61	D47	C,52 9,13/22,27,3 for 5mm	18.30	
18.30 - 18.80	B48			
18.80 - 18.90	D49			
19.30 - 19.53	D50	C,50 11,14 for 30mm/24,26 for 50mm	19.00	
19.80 - 19.90	D51			

Strata

Description	Depth,Level (Thickness)
As sheet 1	(11.60)
Very dense slightly clayey SAND. Sand is fine occasionally medium. (THANET BEDS)	17.30 --22.45 (0.50)
Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular fine to coarse gravel of flint. Gravel is angular to subrounded fine to coarse. (UPPER CHALK)	17.80 --22.95 (5.00)

Legend



Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1086

Borehole BH104
Sheet 2 of 3

31/10/2001 10:04:50 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level National Grid Coordinates	-5.15 m OD E 542438.56 N 180333.51

Samples and Tests / Strata

Depth	Type & No.	Records	Date Casing	Time Water	Description	Depth,Level (Thickness)	Legend
20.30 - 20.68	D52	S,53 7,9/11,16,26	19.00				
20.80 - 20.90	D53						
21.30 - 21.60	D54	S,51 8,12/19,32	19.00		As sheet 2	(5.00pen)	
21.80 - 21.90	D55						
22.30 - 22.60	D56	S,50 7,11/26,24 for 40mm					
			09/03/2001 19.00				
22.70 - 22.80	D57				EXPLORATORY HOLE ENDS AT 22.80 m.	22.80 -27.95	

Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
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1087

Borehole
BH104
Sheet 3 of 3

31/10/2001 10:04:54 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods Cable Percussion 150 mm diameter from 0.00m to 25.80m.	Ground Level -3.05 m OD National Grid Coordinates E 542406.41 N 180283.00	

Samples and Tests / Strata

Depth	Type & No.	Records	Date Casing Time Water	Description	Depth,Level (Thickness)	Legend
0.00 - 1.00	B1	Piston Sample attempted, but failed due to obstruction (rags) in the silt.	29/03/2001 0.00 0.00			b
1.00 - 2.00	B2	Piston Sample attempted, but failed due to obstruction(rags) in the silt.	1.00	Probably very soft dark grey black SILT. (ALLUVIUM)	(2.20)	
2.00 - 2.60 2.00 - 2.50	D3 B4	C,SW = 150,N=9 1,2/3,2,2,2	2.00		2.20 --5.25	
3.50 - 3.95 3.50 - 4.00	D5 B6	C,N=16 2,3/4,3,4,5	3.50			g
5.00 - 5.45 5.00 - 5.50	D7 B8	C,N=18 3,4/4,4,5,5	5.00	Medium dense very gravelly SAND. Sand is medium to coarse. Gravel is angular to subrounded fine to coarse of flint. (RIVER TERRACE DEPOSITS)	(4.45)	
6.50 - 6.74 6.50 - 7.00	D9 B10	C,50 7,14/39,11 for 15mm	6.50		6.65 --9.70	
8.00 - 8.07 8.00 - 8.50	D11 B12	C 50 for 70mm,	8.00	Silt decreases with depth Very dense dark green grey slightly silty SAND. (THANET BEDS)	(8.85)	
9.50 - 9.57 9.50 - 10.00 9.50	D13 B14 W15	C 50 for 65mm,	8.00			

Groundwater
No. Struck Behaviour

Remarks
1. Borehole drilled over 9.20m of water.
2. Water added to assist drilling.
Hole backfill : 0.00m to 3.00m Bentonite (b), 3.00m to 25.80m Grout (g).

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1094

Borehole
BH107
Sheet 1 of 3

31/10/2001 10:07:11 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level National Grid Coordinates	-3.05 m OD E 542406.41 N 180283.00

Samples and Tests / Strata

Depth	Type & No.	Records	Date Casing	Time Water	Description	Depth,Level (Thickness)	Legend
11.00 - 11.07 11.00	D16 B17	C 50 for 70mm,	11.00				
12.50 - 12.57 12.50 - 13.00	D18 B19	C 50 for 65mm,	11.00		As sheet 1	(8.85)	
14.00 - 14.07 14.00 - 14.50	D20 B21	C 50 for 70mm,	11.00				
15.50 - 15.74	D22	S,50 11,14 for 40mm/20 for 50mm,30 for 65mm	11.00			15.50 --18.55	
15.50 - 15.70	B23		30/03/2001 11.00				
17.00 - 17.06 17.00 - 17.50	D24 B25	C 50 for 60mm,	11.00		Very dense grey green slightly clayey SAND. Sand is fine. (THANET BEDS) Clay decreases with depth.	(3.60)	
18.50 - 18.57 18.50 - 19.00	D26 B27	C 50 for 70mm,					
19.10 - 19.20	D28					19.10 --22.15	
					Very stiff dark green grey very sandy CLAY. Sand is fine. (THANET BEDS)	(1.50)	

Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project	LONDON CITY AIRPORT
Project no.	141002
Carried out for	Gibb Limited

1095

Borehole **BH107**
Sheet 2 of 3

31/10/2001 10:07:20 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level National Grid Coordinates	-3.05 m OD E 542406.41 N 180283.00

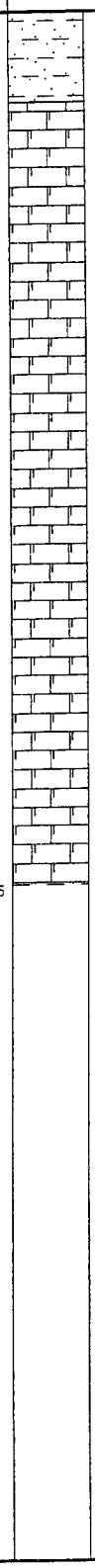
Samples and Tests

Depth	Type & No.	Records	Date Casing	Time Water
20.00 - 20.19	D29	S,50 15,10 for 20mm/36,14 for 20mm		
20.00 - 20.50	B30			
20.60 - 20.95	D31	S,50 20,5 for 20mm/14,16,12,8 for 20mm		
21.10 - 21.20	D32			
21.60 - 22.05	D33	S,N=55 6,6/9,12,14,20		
22.10 - 22.20	D34			
22.60 - 22.98	D35	S,50 7,11/18,30,2 for 5mm		
23.10 - 23.20	D36			
23.60 - 23.95	D37	S,50 8,12/13,24,13 for 20mm		
24.10 - 24.20	D38			
24.60 - 24.70	D39	S 14,36 for 70mm		
25.10 - 25.20	D40			
25.50 - 25.88	D41	S,50 8,12/14,21,15 for 30mm	30/03/2001	

Strata

Description	Depth,Level (Thickness)
As sheet 2	(1.50) 20.60 --23.65
Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular fine to coarse gravel of flint. Gravel is angular to rounded fine to coarse. (UPPER CHALK)	(5.20pen) 25.80 --28.85
EXPLORATORY HOLE ENDS AT 25.80 m.	

Legend



Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1096

Borehole BH107
Sheet 3 of 3

31/10/2001 10:07:27 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods Cable Percussion 150 mm diameter from 0.00m to 18.50m.	Ground Level -4.75 m OD National Grid Coordinates E 542475.13 N 180288.44	

Samples and Tests

Depth	Type & No.	Records	Date Casing Water
			15/03/2001 0.00 0.00
0.00 - 0.10	D1		
0.10 - 0.85	P2		
0.90 - 1.35	D3	C,N=29 3,6/8,9,8,4	0.90
			16/03/2001 1.40
1.90 - 2.35	D5	C,N=11 2,4/2,2,4,3	1.90
1.90 - 2.40	B6		
2.90 - 3.35	D7	C,N=21 3,4/4,5,6,6	2.90
2.90 - 3.40	B8		
3.90 - 4.35	D9	C,N=30 4,5/6,6,8,10	3.90
3.90 - 4.40	B10		
4.90 - 5.35	D11	C,N=22 3,4/5,5,7,5	4.90
4.90 - 5.40	B12		
5.70 - 5.88	D13	C,50 19,6 for 15mm/38,12 for 15mm	5.70
5.70 - 6.20	B14		
6.70 - 6.77	D15	C 50 for 70mm,	6.70
6.70 - 7.20	B16		
7.70 - 7.82	D17	C 50 for 70mm,,- for 50mm	7.50
7.70 - 8.20	B18		
8.70 - 8.77	D19	C 50 for 65mm,	
8.70 - 9.20	B20		
9.70 - 9.72	D21	C 45 for 5mm,5 for 10mm	
9.70 - 10.20	B22		

Strata

Description	Depth,Level (Thickness)	Legend
Probably very soft dark grey black SILT. (ALLUVIUM)	(0.90)	b
	0.90 -5.65	
Medium dense dark brown grey very sandy GRAVEL. Sand is medium to coarse. Gravel is angular to subrounded fine to coarse of flint. (RIVER TERRACE DEPOSITS)	(4.80)	g
	5.70 -10.45	
Very dense dark green grey fine SAND. (THANET BEDS)	(11.20)	

Groundwater
No. Struck Behaviour

Remarks
1. Borehole drilled over 10.90m of water.
2. Borehole terminated due to obstruction.
Hole backfill : 0.00m to 3.00m Bentonite (b), 3.00m to 18.50m Grout (g).

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1097

Borehole **BH108**
Sheet 1 of 2

26/10/2001 13:06:03 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level -4.75 m OD National Grid Coordinates E 542475.13 N 180288.44	

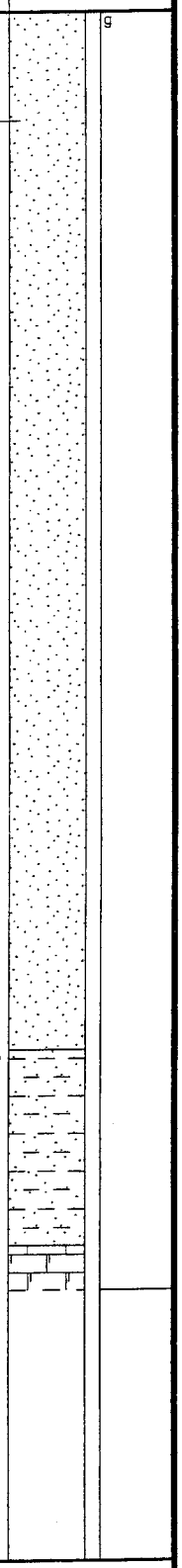
Samples and Tests

Depth	Type & No.	Records	Date Casing	Time Water
10.70 - 10.85	D23	C 50 for 70mm,		
10.70	B24			
11.70 - 11.78	D25	C 42,8 for 5mm		
11.70 - 12.80	B26			
12.70 - 12.80	D27	C 50 for 70mm,		
12.70 - 13.20	B28			
13.70 - 13.79	D29	C 50 for 60mm,		
13.70 - 14.20	B30			
13.70	W31			
14.70 - 14.80	D32	C 36,14 for 10mm		
14.70 - 15.20	B33			
15.70 - 15.80	D34	C 41,9 for 5mm		
15.70 - 16.20	B35			
16.70 - 16.80	D36	C 27,23 for 30mm		
16.70 - 17.20	B37			
17.70 - 17.95	D38	C,50 20,5 for 15mm/36,14 for 20mm		
17.70 - 18.20	B39		16/03/2001 7.50	
			19/03/2001	
18.20 - 18.26	D40	C 50 for 60mm,		

Strata

Description	Depth,Level (Thickness)
As sheet 1 At and below 13.70m: slightly clayey	(11.20)
	16.90 --21.65
Very stiff grey sandy CLAY. Sand is fine. (THANET BEDS)	(1.30)
Recovered as: Angular fine gravel to cobble size flint fragments. (UPPER CHALK)	18.20 --22.95
	(0.30pen)
EXPLORATORY HOLE ENDS AT 18.50 m.	18.50 --23.25

Legend



Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1098

Borehole BH108
Sheet 2 of 2

26/10/2001 13:06:12 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods Cable Percussion 150 mm diameter from 0.00m to 22.00m.	Ground Level -4.75 m OD National Grid Coordinates E 542475.00 N 180290.00	

Samples and Tests				Strata		
Depth	Type & No.	Records	Date Time Casing Water	Description	Depth,Level (Thickness)	Legend
			19/03/2001 0.00			b g
				As BH108 - No samples taken.	(18.30)	

Groundwater	Remarks
No. Struck Behaviour	1. Borehole drilled over 10.90m of water. 2. Borehole redrilled to same depth as BH108 before sampling continued. Hole backfill : 0.00m to 3.00m Bentonite (b), 3.00m to 22.00m Grout (g).

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Scale 1 : 50	Project LONDON CITY AIRPORT Project no. 141002 Carried out for Gibb Limited	1099	Borehole BH108A Sheet 1 of 3

26/10/2001 13:06:18 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level -4.75 m OD National Grid Coordinates E 542475.00 N 180290.00	

Samples and Tests / Strata

Depth	Type & No.	Records	Date Casing	Time Water	Description	Depth,Level (Thickness)	Legend
					As sheet 1	(18.30)	
			19/03/2001 7.50				
			21/03/2001 7.50				
18.30 - 18.51	D41	C,50 14,11 for 40mm/38,12 for 20mm	18.00			18.30 --23.05	
18.30 - 18.80	B42						
18.80 - 18.90	D43				Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular fine to coarse gravel of flint. Gravel is angular to rounded fine to coarse. (UPPER CHALK)	(3.70)	
19.30 - 19.70	D44	S,49 10,12/10,15,24					
19.80	D45						

Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1100

Borehole BH108A
Sheet 2 of 3

26/10/2001 13:06:21 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level -4.75 m OD National Grid Coordinates E 542475.00 N 180290.00	

Samples and Tests / Strata

Depth	Type & No.	Records	Date Casing	Time Water	Description	Depth,Level (Thickness)	Legend
20.30 - 20.56	D46	S,50 9,14/30,20 for 30mm					
20.80 - 20.90	D47				As sheet 2	(3.70pen)	
21.30 - 21.60	D48	S,121 10,15/89,32 for 50mm					
			21/03/2001 18.00				
21.80 - 21.90	D49				EXPLORATORY HOLE ENDS AT 22.00 m.	22.00 --26.75	

Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1101

Borehole BH108A
Sheet 3 of 3

26/10/2001 13:06:25 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	**Equipment and Methods** Cable Percussion 150 mm diameter from 0.00m to 21.90m.		Ground Level -5.45 m OD National Grid Coordinates E 542541.28 N 180286.95

Samples and Tests

Depth	Type & No.	Records	Date Casing	Time Water
			22/03/2001 0.00	
0.00 - 0.80	P1			
0.80 - 1.25	D2	C,N=10 1,2/2,3,3,2	0.80	
0.80 - 1.30	B3			
1.80 - 2.25	D4	C,N=98 3,4/6,6,9,77	1.80	
1.80 - 2.30	B5			
2.30 - 2.41	D6	C,25 25,/25 for 30mm	2.30	
2.30 - 2.70	B7			
3.30 - 3.40	D8	C 34,16 for 20mm	3.30	
3.30 - 3.80	B9			
4.30 - 4.38	D10	C 38,12 for 5mm	4.30	
4.30 - 4.80	B11			
5.30 - 5.39	D12	C 36,14 for 10mm	4.50	
5.30 - 5.80	B13			
6.30 - 6.38	D14	C 41,9 for 5mm	4.50	
			23/03/2001 4.50	
6.30 - 6.80	B15			
7.30 - 7.38	D16	C 40,10 for 5mm	7.30	
7.30 - 7.80 7.30	B17 W18			
8.30 - 8.38	D19	C 42,8 for 5mm	8.30	
8.30 - 8.80	B20			
9.30 - 9.37	D21	C 50 for 70mm,	9.30	
9.30 - 9.80	B22			

Strata

Description	Depth,Level (Thickness)
Probably very soft dark grey black SILT. (ALLUVIUM)	(0.80)
	0.80 --6.25
Medium dense dark grey slightly sandy GRAVEL. Sand is medium to coarse. Gravel is angular to subrounded fine to coarse of flint. (RIVER TERRACE DEPOSITS)	(1.50)
	2.30 --7.75
Very dense dark grey SAND. Sand is fine. (THANET BEDS)	(8.00)

Legend: g

Groundwater
No. Struck Behaviour

Remarks
1. Borehole drilled over 11.60m of water.
Hole backfill : 0.00m to 21.90m Grout (g).

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1102

Borehole **BH109**
Sheet 1 of 3

31/10/2001 10:07:34 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level -5.45 m OD National Grid Coordinates E 542541.28 N 180286.95	

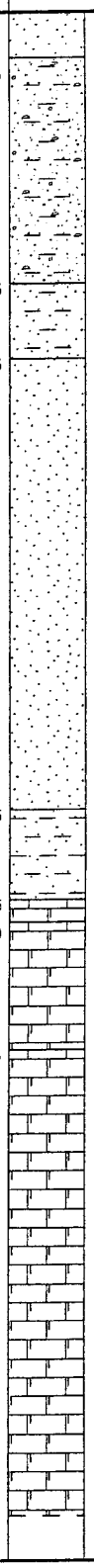
Samples and Tests

Depth	Type & No.	Records	Date Casing	Time Water
10.30 - 10.37	D23	C 50 for 70mm,	10.30	
10.30 - 10.80	B24			
11.80 - 11.98	D25	C,50 19,6 for 15mm/27,23 for 15mm	11.80	
11.80 - 12.30	B26			
12.30 - 12.37	D27	C 50 for 70mm,	12.00	
12.30 - 12.80	B28			
13.80 - 13.89	D29	C 50 for 65mm,		
13.80 - 14.30	B30			
15.30 - 15.55	D31	C,50 18,7 for 20mm/31,19 for 30mm		
15.30 - 15.80	B32			
15.90 - 15.95	D33	C 50 for 30mm,		
15.90 - 16.40	B34			
16.90 - 17.09	D35	C,50 18,7 for 20mm/34,16 for 20mm	15.00	
17.40 - 17.50	D36			
17.90 - 18.18	D37	S,50 12,13 for 40mm/17,25,8 for 15mm	17.00	
18.40 - 18.50	D38			
18.90 - 19.09	D39	S,50 17,8 for 15mm/50 for 77mm		
19.40 - 19.50	D40			
19.40 - 19.90	B41			
19.90 - 20.14	D42	S,50 11,14 for 60mm/23,27 for 40mm		

Strata

Description	Depth,Level (Thickness)
As sheet 1	(8.00)
	10.30 --15.75
Very dense dark grey green clayey SAND with occasional gravel. Sand is fine to coarse. Gravel is angular to subrounded fine and medium of flint. (RIVER TERRACE DEPOSITS) Gravels decrease with depth, becomes slightly more clayey	(1.50)
	11.80 --17.25
Very dense clayey SAND. Sand is fine. (THANET BEDS)	(0.50)
	12.30 --17.75
Very dense fine SAND. (THANET BEDS)	(3.00)
	15.30 --20.75
Very stiff very sandy CLAY. Sand is fine. (THANET BEDS)	(0.60)
	15.90 --21.35
Recovered as: Black angular to subangular fine to coarse gravel of flint. (UPPER CHALK)	
	16.05 --21.50
Recovered as: Black angular to subangular fine to coarse gravel of flint with some chalk putty. (UPPER CHALK)	(0.85)
	16.90 --22.35
Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular fine to coarse gravel of flint. Gravel is angular to rounded fine to coarse. (UPPER CHALK)	(5.00)

Legend



Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1103

Borehole BH109
Sheet 2 of 3

31/10/2001 10:07:44 ESGLog v2.11

Borehole Log

Soil Mechanics

Drilled by MC Logged by JR Checked by FM	Equipment and Methods See sheet 1	Ground Level National Grid Coordinates	-5.45 m OD E 542541.28 N 180286.95

Samples and Tests				Strata		
Depth	Type & No.	Records	Date Casing / Time Water	Description	Depth,Level (Thickness)	Legend
20.40 - 20.50	D43					
20.90 - 21.16	D44	S,50 9,13/17,28,5 for 10mm		As sheet 2	(5.00pen)	
21.40 - 21.50	D45					
			26/03/2001 17.00			
21.80 - 21.90	D46			EXPLORATORY HOLE ENDS AT 21.90 m.	21.90 --27.35	

Groundwater
No. Struck Behaviour

Remarks

Notes : For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.
Scale 1 : 50

Project LONDON CITY AIRPORT
Project no. 141002
Carried out for Gibb Limited

1104

Borehole
BH109
Sheet 3 of 3

31/10/2001 10:07:50 ESGLog v2.11

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Borehole No
WS3
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	11/02/2013		1000 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
								MADE GROUND: Soft brown sandy gravelly clay. Gravel is brick, ceramic, ash, clinker, plastic and flint.
					1.00			MADE GROUND: Gravelly cobbley sand. Gravel is concrete, brick, ash and flint. Cobbles are brick and concrete.
					3.70			MADE GROUND: Soft brown gravelly clay. Gravel is brick, ash and clinker.
					5.00			End of Borehole at 5.00 m

Type Results

Excavation Remarks: Hole moved from original position after possible UXO detection.

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS4
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	11/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.15			CONCRETE
		0.50		1.0ppmV				MADE GROUND: Black ashy gravelly sand. Gravel is of mixed lithologies, brick and ceramic. Slight hydrocarbon odour.
		1.00		12.0ppmV				
					1.30			MADE GROUND: Soft brown clay.
		1.50		0.0ppmV				
					1.70			MADE GROUND: Orange sand and gravel. Both are fine to coarse.
		2.00		0.0ppmV				
		2.50		0.0ppmV				
		3.00		0.0ppmV				
		4.00		0.0ppmV	4.00			MADE GROUND: Dark brown gravelly clay. With fragments of brick and ash (reworked Alluvium).
		4.50		0.0ppmV				
		5.00		0.0ppmV	5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS6
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
Client:	**Dates:**	**Level:**	**Boring Diameter:**	**Checked By**
London City Airport Ltd	15/02/2013		100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Tarmac
		0.50		0.0ppmV				MADE GROUND: Grey sandy clayey gravel of brick, concrete, ash and stone of mixed lithologies.
		1.00		0.0ppmV	1.00			MADE GROUND: Orange sandy fine to coarse gravel of stones of mixed lithologies.
		1.50		1.0ppmV	1.70			MADE GROUND: Black sandy gravelly clay. Gravel is brick, ash and timber (reworked Aluvium).
		2.50		2.0ppmV				
		3.00		25.0ppmV				
		3.50		10.0ppmV				
		4.00		0.0ppmV				
		4.50		0.0ppmV	4.50			Soft grey mottled black CLAY (Alluvium).
	▽	5.00		0.0ppmV	5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 4.8m bgl during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS7
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	19/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Brick Paving
					0.30			MADE GROUND: Brown gravelly sand. Gravel is fine to coarse of mixed lithologies.
		0.50		0.0ppmV	0.45			
		0.50	ES					MADE GROUND: Tarmac
		1.00		0.0ppmV				MADE GROUND: Brown gravelly sand. Gravel is fine to coarse and of mixed lithologies.
		1.50		0.0ppmV				
		2.00		0.0ppmV				
		2.50		0.0ppmV				
		2.80	ES		2.80			MADE GROUND: Soft brown sandy gravelly clay.
		3.00		0.0ppmV	3.00			MADE GROUND: Soft grey / black clay with bands of ashy gravel of brick.
		3.50		0.0ppmV				
		4.00		0.0ppmV				
		4.50		0.0ppmV	4.50			Soft grey CLAY (Alluvium).
		5.00		0.0ppmV	5.00			End of Borehole at 5.00 m

Type | Results

Excavation Remarks:

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS8
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client: London City Airport Ltd	Dates: 15/02/2013	Level: / Boring Diameter: 100 (mm)	Checked By NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Tarmac
					0.25			Reinforced concrete
		0.50 0.50		0.0ppmV				MADE GROUND: Orange brown slightly gravelly sand. Gravel is fine to coarse flint.
		1.00		0.0ppmV				
		1.50		0.0ppmV				
		2.00		0.0ppmV				
		2.50		0.0ppmV				
		3.00 3.10		0.0ppmV	3.00			MADE GROUND: Soft brown gravelly clay. Gravel is brick, ash and clinker.
		3.50		0.0ppmV				
		4.00		0.0ppmV				Becoming grey at 4.0m bgl.
		4.50		0.0ppmV				
		5.00		0.0ppmV	5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE III (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS9
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	13/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.05			Tarmac
					0.38			Concrete
		0.50		0.0ppmV				MADE GROUND: Orange-brown, gravelly fine to coarse sand. Gravel is fine to coarse of mixed lithologies.
		1.00		0.0ppmV	1.00			Soft brown sandy peaty CLAY (Alluvium - possibly reworked).
		1.50		0.0ppmV				
		2.00		0.0ppmV				
					2.30			Orange SAND and GRAVEL. Gravel is fine to coarse and of mixed lithologies (possible Made Ground).
		2.50		0.0ppmV				
		3.00		0.0ppmV				
	▽	3.50		0.0ppmV				
					4.00			End of Borehole at 4.00 m
			Type	Results				

Excavation Remarks: Refusal at 4.0m bgl on dense sand and gravel. Hole collapsed to 3.5m bgl.

Groundwater Remarks: Groundwater encountered at 3.5m bgl.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS10
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	15/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
		0.00			0.10			Tarmac
					0.35			Concrete
								MADE GROUND: Sandy gravel of flint, brick and concrete.
		1.00	ES					
					1.20			MADE GROUND: Soft grey gravelly clay. Gravel is ash and brick.
					2.40			MADE GROUND: Sandy fine to coarse gravel of mixed lithologies.
		2.70	ES					
					3.70			MADE GROUND: Soft brown gravelly clay. Gravel is brick, ash and timber.
		3.90	ES					
	▽				4.30			Orange sandy fine to coarse GRAVEL of mixed lithologies (River Terrace Deposits).
					5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 4.5m bgl during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS12
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	12/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Tarmac
					0.25			Concrete
					0.50			MADE GROUND: Sandy gravel of mixed lithologies. Concrete obstruction encountered at 0.5m depth.
								End of Borehole at 0.50 m

Type | Results

Excavation Remarks: Hole terminated at 0.5m on concrete obstruction.

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE III (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS13
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	12/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Tarmac
					0.38			Concrete
		0.50		0.0ppmV				MADE GROUND: Orange-brown sand and gravel. Gravel is fine to coarse and of mixed lithologies.
		1.00		0.0ppmV				
					1.30			Soft brown sandy gravelly peaty CLAY (Alluvium - possbily reworked)
		1.50		0.0ppmV				
		2.00		0.0ppmV				
		2.50		0.0ppmV				
		3.00		0.0ppmV				
		3.50		0.0ppmV				
					3.70			Orange clayey SAND and GRAVEL. Gravel is fine to coarse and of mixed lithologies (River Terrace Deposits).
		4.00		0.0ppmV	4.00			End of Borehole at 4.00 m

Type	Results

Excavation Remarks: Refusal at 4.0m on dense sand and gravel.

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

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Borehole No
WS14
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client: London City Airport Ltd	Dates: 19/02/2013	Level: / Boring Diameter: 100 (mm)	Checked By NT

Scale 1:50

Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
			0.25			Concrete
0.50		2.0ppmV				MADE GROUND: Orange brown gravelly sand. Gravel is fine to coarse and of mixed lithology.
1.00		0.0ppmV				
1.00	ES					
1.50		0.0ppmV				
2.00		0.0ppmV				
2.50		0.0ppmV				
3.00		0.0ppmV				
3.50		0.0ppmV				
4.00		0.0ppmV				
4.50		0.0ppmV				
			4.70			Soft brown peaty CLAY (Alluvium).
5.00		0.0ppmV	5.00			End of Borehole at 5.00 m

Installation Details: Water Strikes

Type | Results

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 2.0m bgl during drilling.

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Borehole No
WS15
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	14/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Granite block paving
								Concrete
		0.50		2.0ppmV	0.50			MADE GROUND: Gravelly clayey sand. Gravel is fine to coarse flint.
		0.70						
		1.00		2.0ppmV	1.10			MADE GROUND: Soft grey mottled black clay with occasional fragments of brick, shell, timber, ash, clinker and ceramic.
		1.50		2.0ppmV				
		1.70						
	▽	2.00		1.0ppmV				
		2.50		1.0ppmV				
					5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 2.0m bgl during drilling.

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Borehole No
WS16
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client: London City Airport Ltd	Dates: 14/02/2013	Level: / Boring Diameter: 100 (mm)	Checked By NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
								Concrete hardstanding.
					0.40			MADE GROUND: Orange gravelly sand. Gravel is fine to coarse flint.
		0.80						
		1.00		0.0ppmV				
					1.30			MADE GROUND: Soft brown sandy gravelly clay.
		2.00		0.0ppmV				
		2.50						
		3.00		0.0ppmV	3.00			No recovery.
		4.00		0.0ppmV	4.00			End of Borehole at 4.00 m

Type | Results

Excavation Remarks: Refusal at 4.0m on dense gravels.

Groundwater Remarks: Groundwater not encountered during drilling.

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Borehole No
WS17
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	13/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Granite block paving.
								MADE GROUND: Concrete slab.
					0.52			MADE GROUND: Soft grey / black gravelly clay. Gravel is ceramic, brick, chalk and flint.
		1.00		0.0ppmV				
		1.20	ES					
	▽	2.00		0.0ppmV	2.00			MADE GROUND: Orange-brown gravelly sand. Gravel is fine to coarse flint.
		2.10	ES					
		3.00		0.0ppmV				
		4.00		0.0ppmV				
					5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 2.0m bgl during drilling.

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Borehole No
WS18
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
	Client:	**Dates:**	**Level:** / **Boring Diameter:**	**Checked By**
	London City Airport Ltd	19/02/2013	100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Concrete hardstanding.
		0.50		0.0ppmV				MADE GROUND: Orange brown gravelly sand. Gravel is fine to coarse and of mixed lithologies.
		1.00 1.00	ES	0.0ppmV				
		1.50		0.0ppmV				
	▽	2.00		0.0ppmV				
		2.50		0.0ppmV				
		3.00		0.0ppmV				
		3.50		0.0ppmV				
		4.00		0.0ppmV				
		4.50		0.0ppmV				
					4.70			Soft grey sandy CLAY (Alluvium)
		5.00		0.0ppmV	5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 2.0m bgl during drilling.

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Borehole No
WS19
Sheet 1 of 1

Project No.:	Project Name:	Location:	Excavation Method:	Logged By
HLEI_24974	London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA
Client:	**Dates:**	**Level:**	**Boring Diameter:**	**Checked By**
London City Airport Ltd	19/02/2013		100 (mm)	NT

Scale 1:50

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
					0.10			Concrete hardstanding.
		0.50		0.0ppmV				MADE GROUND: Orange brown gravelly sand. Gravel is fine to coarse and of mixed lithologies.
		0.50	ES					
	▽	1.00		0.0ppmV				
		1.50		0.0ppmV				
		1.80	ES		1.80			MADE GROUND: Very soft orange brown sandy clay.
		2.00		0.0ppmV	2.00			MADE GROUND: Grey gravelly sand. Gravel is fine to coarse and of mixed lithologies.
		2.50		0.0ppmV				
		3.00		0.0ppmV				
		3.50		0.0ppmV				
		4.00		0.0ppmV				
					4.90			
		5.00		0.0ppmV	5.00			Grey black sandy CLAY (Alluvium)
								End of Borehole at 5.00 m

Type	Results

Excavation Remarks:

Groundwater Remarks: Groundwater encountered at 1.0m bgl during drilling.

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Borehole No
WS21

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	13/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description	
		1.00		0.0ppmV				MADE GROUND: Clayey sandy gravel of mixed lithologies with fragements of brick and concrete.	1
		2.00		0.0ppmV	2.00			Soft brown peaty CLAY (Alluvium - possibly reworked).	2
		3.00		0.0ppmV	3.00			No recovery.	3
					4.00			End of Borehole at 4.00 m	4
			Type	Results					5
									6
									7
									8
									9

Excavation Remarks: No recovery in wet sand and gravel.

Groundwater Remarks: Groundwater encountered at 3.0m bgl during drilling.

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Borehole No
WS22
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	MA

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	13/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
		0.40	ES					MADE GROUND: Clayey gravelly sand. Gravel is brick and ash.
		1.00		0.0ppmV				
		1.60	ES		1.50			MADE GROUND: Soft grey mottled black clay with rare brick fragments and ash.
		2.00		0.0ppmV				
		3.00		0.0ppmV				
		4.00		0.0ppmV				
					5.00			End of Borehole at 5.00 m
			Type	Results				

Excavation Remarks:

Groundwater Remarks: Groundwater not encountered during drilling.

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Borehole No
WS23
Sheet 1 of 1

Project No.:	Scale
HLEI_24974	1:50

Project Name:	Location:	Excavation Method:	Logged By
London City Airport	Hartmann Rd E16 2PX	Tracked window sample rig	RP

Client:	Dates:	Level:	Boring Diameter:	Checked By
London City Airport Ltd	14/02/2013		100 (mm)	NT

Installation Details	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Test Result	Depth (m)	Level (m ASD)	Legend	Stratum Description
		0.00			0.15			MADE GROUND: Black clayey gravelly sand with fibrous organic material.
					0.40			MADE GROUND: Yellow brown sandy gravel with cobbles of concrete.
								No recovery.
		1.00	ES		1.00			MADE GROUND: Soft grey / brown sandy gravelly clay. Gravel is fine to medium brick, flint and ash.
					1.80			No recovery.
		2.00	ES		2.00			Soft dark grey silty clay (reworked Alluvium).
					2.30			No recovery.
					3.00			End of Borehole at 3.00 m

Type | Results

Excavation Remarks:

Groundwater Remarks: Groundwater not encountered during drilling.

HoleBASE II (Bld 426.58) Standard Borehole Log v1 dated 26th Mar 03

BOREHOLE LOG

Borehole No. **BH1**
Sheet 1 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method: Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 22/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 23/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Description Of Strata
0.10	PID	0ppm		(0.20)	0.20	Brown gravelly fine to medium sand. Gravel is angular to sub-rounded fine to medium of flint and red brick, concrete and plastic fragments. (MADE GROUND)
0.10	D			(0.15)	0.35	
0.10-0.20	B					
0.35	D			(0.55)		
0.40	ES				0.90	Concrete. (CONCRETE)
0.50	PID	17ppm				
0.60	D			(0.70)		Brown gravelly fine to medium sand with pockets of grey clay. Gravel is angular to sub-rounded fine to medium of flint and red brick, concrete and plastic fragments. (MADE GROUND)
0.90	ES					
0.90	D				1.60	
0.90-1.50	B					
1.00	PID	0ppm				
1.50	SPT	N=10 (2,1/2,2,3,3)				Brown/grey sandy gravelly clay. Gravel is angular to sub-rounded fine to medium of flint and red and yellow brick, concrete and ceramic fragments. Yellow brick blocks at 1.60m bgl. (MADE GROUND)
1.50	PID	0ppm				
1.50-1.95	D					
1.60	D			(2.20)		
2.00	PID	0ppm				
2.50	SPT	N=23 (2,1/3,6,8,6)				Dark brown sandy gravelly clay. Gravel is angular to sub-rounded fine to medium of flint and red and yellow brick fragments. (MADE GROUND)
2.50	PID	0ppm				
2.50-3.00	B					
3.00	ES					
3.00	PID	0ppm		(0.10)	3.80	
3.40	D				3.90	Brown gravelly fine to medium sand. Gravel is sub-angular to rounded fine of flint. (MADE GROUND)
3.50	PID	0ppm				
3.50	SPT	N=3 (2,2/1,0,1,1)		(1.10)		Dark grey brown slightly peaty CLAY. (ALLUVIUM)
3.50-3.95	D					
3.90	D					
4.00	PID	0ppm			5.00	Grey mottled reddish brown silty CLAY. (ALLUVIUM)
4.00-4.50	B					
4.50-4.95	U					
4.70	ES			(1.30)		
5.00	PID	0ppm				
5.00	D					
5.50	SPT	N=4 (1,1/1,1,1,1)				
5.50-5.95	D				6.30	Dark brown slightly clayey PEAT. (ALLUVIUM)
6.00	PID	0ppm				
6.30	D					
6.50-6.95	U					
7.00	PID	0ppm				
7.00	D					
7.00-7.50	B			(2.30)		
7.50	SPT	N=6 (0,1/1,1,2,2)				
7.50-7.95	D					
8.00	PID	1ppm				
8.30	D					
8.50-8.95	U				8.60	Greenish grey slightly silty fine SAND. (SHEPPERTON GRAVEL MEMBER)
9.00	PID	0ppm		(0.90)		
9.00	D					
9.00-9.50	B					
9.50	SPT	N=23 (4,4/5,4,6,8)			9.50	Grey/brown slightly sandy angular to rounded fine to coarse GRAVEL of flint.
9.50	D					
9.50-10.00	B					

Continued on next sheet

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH1**

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	22/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	23/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		10.00	ES						(SHEPPERTON GRAVEL MEMBER)
		10.00	PID	0ppm					
		10.50	D			(1.50)			
		11.00	PID	0ppm			11.00		Grey/brown sandy angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		11.00	SPT	N=37 (7,9/9,9,9,10)		(0.80)			
		11.00-11.50	B				11.80		Grey/brown very gravelly fine to medium SAND. Gravel is sub-angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
		12.00	D						
		12.00	PID	0ppm					
		12.50	SPT	N=34 (3,3/5,7,10,12)					
		12.50-13.00	B						
		13.00	PID	0ppm					
		13.50	D			(3.70)			
		14.00	PID	0ppm					
		14.00	SPT	N=13 (2,3/4,3,2,4)					
		14.00-14.50	B						
		15.00	PID	0ppm					
		15.00	D						
		15.50	SPT	N=32 (3,4/6,9,9,8)		(0.30)	15.50		Grey/brown sandy angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		15.50-16.00	B				15.80		Grey/brown very gravelly fine to medium SAND. Gravel is sub-angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
		16.00	PID	1ppm					
		16.50	D						
		17.00	SPT	N=13 (1,2/3,4,3,3)		(2.50)			
		17.00	PID	0ppm					
		17.00-17.50	B						
		18.00	D						
		18.00	PID	0ppm					
		18.30	D			(0.10)	18.30		
		18.50	SPT	50 (25 for 100mm/50 for 60mm)			18.40		Grey/brown fine SAND with rare angular to rounded fine gravel of flint. (SHEPPERTON GRAVEL MEMBER)
		18.50-19.00	B						Dark grey silty fine SAND. (THANET SAND FORMATION)
		19.00	PID	0ppm		(1.60)			
		19.30	ES						
		19.50	D						
		20.00	PID	0ppm			20.00		

Continued on next sheet

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details				Groundwater Notes		
Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
				9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH1**
Sheet 3 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 22/10/2014	Casing Diameter (mm)	Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 23/10/2014			Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50		1:50

Well	Water Strikes	Samples & In Situ Testing			Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		Depth (m)	Type	Results					
		20.00	SPT	50 (25 for 80mm/50 for 70mm)					End of borehole at 20.00 m
		20.00-20.45	D						

21
22
23
24
25
26
27
28
29
30

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details				Groundwater Notes		
Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
				9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH2**
Sheet 1 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method: Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 24/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 27/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Description Of Strata
0.10	D			(0.25)		Brown gravelly fine to medium sand. Gravel is angular to sub-angular fine to medium of flint and red and yellow brick and concrete fragments. (MADE GROUND)
0.15	ES			(0.25)	0.25	
0.50	PID	0ppm			0.50	
0.50	D					
0.50-1.00	B					
0.60	ES					Concrete. (CONCRETE)
1.00	PID	0ppm		(1.30)		
1.20	D					Dark brown/black very ashey gravelly sand. Gravel is angular to sub-rounded fine to medium of flint and red brick fragments. (MADE GROUND)
1.50	SPT	N=12 (1,5/3,3,3,3)				
1.50	PID	0ppm		(0.10)	1.80	
1.50-1.95	D				1.90	Reddish brown gravelly sand. Gravel is angular to sub-rounded fine of flint. (MADE GROUND)
1.80	D			(0.50)		
2.00	PID	0ppm			2.40	Reddish brown angular to rounded fine to medium gravel of flint. (MADE GROUND)
2.30	D					
2.50	PID	0ppm				
2.50	SPT	N=2 (1,1/0,1,0,1)		(1.00)		Reddish brown/black sandy gravel. Gravel is angular to rounded fine to medium of flint with tarmac fragments. (MADE GROUND)
2.50-3.00	B					
3.00	PID	0ppm			3.40	
3.00	D					Dark grey/brown sandy CLAY with rare sub-rounded to rounded fine gravel of flint. (ALLUVIUM)
3.50	SPT	N=0 (0,0/0,0,0,0)		(1.00)		
3.50	PID	0ppm				
3.50-4.00	B					
4.00	PID	0ppm			4.40	Dark brown slightly peaty CLAY. (ALLUVIUM)
4.00	ES			(0.50)		
4.40	D					
4.50-4.95	U				4.90	Grey/brown CLAY. (ALLUVIUM)
5.00	PID	0ppm				
5.00	D					
5.40	ES					
5.50	SPT	N=6 (1,1/1,2,1,2)		(1.60)		
5.50-5.50	B					
5.50-5.95	D					
6.00	PID	0ppm				
6.50	D				6.50	Dark brown PEAT. (ALLUVIUM)
6.50-6.95	U					
7.00	PID	0ppm				
7.00	D					
7.00-7.50	B					
7.50	SPT	N=7 (1,2/1,1,2,3)				
7.50-7.95	D			(2.80)		
8.00	PID	2ppm				
8.50-8.95	U					
8.50-9.00	B					
9.00	PID	2ppm				
9.30	ES			(0.10)	9.30	
9.30	D			(0.10)	9.40	Dark brown/blueish grey peaty sandy CLAY. (ALLUVIUM)
9.50	SPT	N=11 (4,3/3,3,3,2)			9.50	Grey/brown gravelly fine to medium SAND. Gravel is angular to sub-angular fine of flint.
9.50	ES					

Continued on next sheet

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH2**

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	24/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	27/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		9.50-10.00	B						(SHEPPERTON GRAVEL MEMBER)
		10.00	PID	0ppm					Grey/brown sandy angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		11.00	PID	0ppm		(2.50)			
		11.00	SPT	N=18 (5,6/6,5,4,3)					
		11.00-11.50	B						
		12.00	D				12.00		Grey/brown gravelly fine to medium SAND. Gravel is angular to sub-angular fine of flint. (SHEPPERTON GRAVEL MEMBER)
		12.00	PID	0ppm					
		12.50	SPT	N=21 (4,3/5,5,6,5)					
		12.50-13.00	B						
		13.00	PID	0ppm					
		13.50	D						
		14.00	SPT	50 (25 for 125mm/50 for 100mm)					
		14.00	PID	0ppm		(5.00)			
		14.00-14.50	B						
		15.00	D						
		15.00	PID	0ppm					
		15.50	SPT	N=31 (5,7/10,5,7,9)					
		15.50-16.00	B						
		16.00	PID	0ppm					
		16.50	D						
		17.00	PID	0ppm			17.00		Grey/brown sandy angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		17.00	SPT	50 (3,8/50 for 180mm)		(0.50)			
		17.00-17.50	B				17.50		Grey/brown slightly gravelly fine to medium SAND. Gravel is angular to sub-angular fine of flint. (SHEPPERTON GRAVEL MEMBER)
		18.00	PID	0ppm		(0.60)			
		18.10	D				18.10		Dark grey silty fine SAND. (THANET SAND FORMATION)
		18.20	ES						
		18.50	SPT	50 (25 for 145mm/50 for 50mm)					
		18.50-19.00	B			(1.90)			
		19.00	PID	0ppm					
		19.50	D						
							20.00		

Continued on next sheet

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH2**
Sheet 3 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 24/10/2014	Casing Diameter (mm)	Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 27/10/2014			Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50		1:50

Well	Water Strikes	Samples & In Situ Testing			Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		Depth (m)	Type	Results					
		20.00	SPT	50 (25 for 110mm/50 for 60mm)					End of borehole at 20.00 m
		20.00	PID	0ppm					
		20.00-20.45	D						

21
22
23
24
25
26
27
28
29
30

Remarks

Hole terminated at target depth of 20.00m bgl.

Chiseling Details				Groundwater Notes		
Time Taken	Depth From (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
				9.50	9.50	5.70

BOREHOLE LOG

Borehole No. **BH3**
Sheet 1 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	30/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	03/11/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results
0.10	D	
0.10-0.50	B	
0.50	PID	237ppm
0.80	ES	
1.00	PID	0ppm
1.10	D	
1.50	PID	0ppm
1.50	SPT	50 (3,10/50 for 295mm)
1.50-1.95	D	
1.50-2.00	B	
2.00-2.40	B	
2.50	PID	3ppm
2.50	SPT	50 (6,10/50 for 145mm)
2.50-2.80	D	
2.70	ES	
2.80-3.10	B	
3.00	PID	4ppm
3.10	D	
3.10-3.50	B	
3.40	ES	
3.50	SPT	50 (1,8/50 for 235mm)
3.50	PID	4ppm
3.50-3.95	D	
4.00	PID	2ppm
4.30	D	
4.50	SPT	N=30 (3,4/9,7,9,5)
4.50-5.00	B	
5.00	PID	1ppm
5.10	D	
5.20	D	
5.50-5.95	U	
6.00	PID	0ppm
6.00	D	
6.40	D	
6.50	SPT	N=2 (0,0/0,0,1,1)
6.50-6.95	D	
6.50-7.00	B	
7.00	PID	0ppm
7.30	D	
7.50-7.95	U	
8.00	PID	0ppm
8.00	D	
8.00-8.50	B	
8.50	SPT	N=4 (1,1/1,1,1,1)
8.50-8.95	D	
9.00	PID	0ppm
9.20	ES	
9.30	D	

Thickness (m)	Depth (m)	Description Of Strata
(0.06)	0.06	Concrete block paving. (CONCRETE)
(0.10)	0.16	Green crushed glass. (MADE GROUND)
(0.10)	0.26	Grey gravelly medium to coarse sand. Gravel is sub-rounded to rounded fine to medium of flint. (MADE GROUND)
(0.84)	1.10	Brown gravelly sand with pockets of dark brown/grey clay becoming dark brown and ashey from 0.70 to 0.90m bgl. Gravel is angular to rounded fine to medium of flint and wood, ceramic, red brick and metal fragments. (MADE GROUND)
(0.40)	1.50	*Odour recorded.*
(0.50)	2.00	Reddish brown sandy red brick and wood fragments. (MADE GROUND)
(0.30)	2.30	Brown slightly clayey gravelly sand. Gravel is angular to sub-rounded of flint and concrete and red brick fragments. (MADE GROUND)
(0.20)	2.50	Concrete. (CONCRETE)
(0.30)	2.80	Brown gravelly sand. Gravel is angular to sub-rounded fine to medium of red brick and wood fragments. (MADE GROUND)
(0.10)	2.90	Brown clayey gravelly fine to medium sand. Gravel is angular to rounded fine to medium of flint and concrete and red brick fragments. (MADE GROUND)
(0.20)	3.10	Concrete. (CONCRETE)
(1.20)	4.30	Brown clayey gravelly fine to medium sand. Gravel is angular to rounded fine to medium of flint and concrete and red brick fragments. (MADE GROUND)
(0.80)	5.10	Brown sandy gravelly clay. Gravel is angular to sub-angular fine to medium of flint and red brick fragments. Likely reworked alluvium. (MADE GROUND)
(1.30)	6.40	Grey/brown clay with occasional angular to sub-angular fine red and yellow brick fragments. (MADE GROUND)
(0.30)	6.70	Grey/brown mottled reddish brown sandy CLAY with occasional pockets of dark brown peat. (ALLUVIUM)
(0.60)	7.30	Grey slightly silty slightly peaty CLAY. (ALLUVIUM)
(2.00)	9.30	Dark brown/grey clayey PEAT with shell fragments. (ALLUVIUM)

Continued on next sheet

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.30	5.50	6.60

BOREHOLE LOG

Borehole No. **BH3**
Sheet 2 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	30/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	03/11/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Description Of Strata
10.00	SPT	N=14 (3,3/4,4,3,3)				Dark brown slightly clayey PEAT. (ALLUVIUM)
10.00	PID	0ppm				Dark grey/brown angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
10.00-10.50	B					
11.00	D					
11.00	PID	0ppm				
11.50	SPT	N=24 (3,8/8,6,5,5)		(3.90)		
11.50-12.00	B					
12.00	PID	0ppm				
12.50	D					
13.00	SPT	N=4 (2,1/1,1,1,1)				
13.00	PID	0ppm			13.20	Grey/brown silty fine SAND with a band of peat. (SHEPPERTON GRAVEL MEMBER)
13.00-13.20	B			(0.60)		
13.20	D					
13.40	ES				13.80	Grey/brown gravelly fine to medium SAND. Gravel is sub-angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
13.50-13.80	B			(0.40)		
13.80	D				14.20	
14.00	PID	0ppm		(0.30)		
14.50	SPT	N=8 (3,2/2,2,2,2)			14.50	Grey/brown sandy sub-rounded to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
14.50-15.00	B					
15.00	PID	0ppm				Grey/brown gravelly fine to medium SAND. Gravel is sub-angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
15.50	D			(1.50)		
16.00	PID	0ppm			16.00	Grey/brown slightly gravelly fine to medium SAND. Gravel is angular to rounded fine of flint. (SHEPPERTON GRAVEL MEMBER)
16.00	SPT	N=8 (3,2/2,2,2,2)				
16.00-16.50	B			(1.00)		
17.00	PID	0ppm			17.00	Grey/brown fine to medium SAND with rare angular to rounded fine gravel of flint from 16.00 to 17.50m bgl. (SHEPPERTON GRAVEL MEMBER)
17.00	B					
17.50	SPT	50 (25 for 7mm/50 for 20mm)				
17.50-17.95	D					
17.50-18.00	B					
18.00	PID	0ppm				
18.50	D			(4.50)		
19.00	PID	0ppm				
19.00	SPT	47 (25 for 75mm/47 for 105mm)				
19.00-19.45	D					
19.00-19.50	B					
20.00	D					

Continued on next sheet

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.30	5.50	6.60

BOREHOLE LOG

Borehole No. **BH3**
Sheet 3 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	30/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	03/11/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		20.00	PID	0ppm					
		20.50	SPT	50 (25 for 145mm/50 for 90mm)					
		20.50-20.95	D						
		20.50-21.00	B						
		21.00	PID	0ppm					
		21.50	D				21.50		Grey/brown silty fine SAND. (THANET SAND FORMATION)
		22.00	PID	0ppm					
		22.00	SPT	50 (25 for 120mm/50 for 85mm)					
		22.00-22.45	D						
		22.00-22.50	B						
		22.50	ES						
		23.00	D						
		23.00	PID	0ppm					
		23.50	SPT	50 (25 for 115mm/50 for 80mm)		(4.00)			
		23.50-23.95	D						
		23.50-24.00	B						
		24.00	PID	0ppm					
		25.00	PID	0ppm					End of borehole at 25.00 m
		25.00	SPT	50 (23 for 80mm/50 for 105mm)			25.50		
		25.00-25.45	D						

Depth scale: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.30	5.50	6.60

BOREHOLE LOG

Borehole No. **BH4**
Sheet 1 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method: Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 28/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 29/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results	Thickness (m)	Depth (m)	Description Of Strata
			(0.06)		
0.20	D		(0.12)	0.06	Concrete block paving. (CONCRETE)
			(0.08)	0.18	
0.45	ES		(0.24)	0.26	Green crushed glass. (MADE GROUND)
0.50	PID	2ppm	(0.10)	0.50	
			(0.25)	0.60	Concrete. (CONCRETE)
0.85	D			0.85	
1.00	PID	1ppm			Reddish brown gravelly sand. Gravel is sub-rounded to rounded fine of flint with rare concrete fragments. (MADE GROUND)
1.00-1.50	B				
1.30	ES		(1.15)		
1.50	SPT	N=4 (1,1/1,1,1,1)			
1.50	PID	1ppm			Pinkish brown sandy angular to sub-rounded fine to medium gravel of limestone with rare red brick and concrete fragments. (MADE GROUND)
1.50-19.50	D			2.00	
2.00	D				
2.00-2.50	B				
2.10	ES				Brown very gravelly fine to medium sand. Gravel is angular to sub-angular fine to coarse of flint and red brick and concrete fragments. (MADE GROUND)
2.50	SPT	N=6 (1,1/1,2,1,2)	(1.50)		
2.50	PID	0ppm			
2.50-2.95	D				
3.00	PID	0ppm			Dark brown/black ashey slightly clayey gravelly sand. Gravel is angular to sub-rounded fine of flint and red brick and chalk fragments. (MADE GROUND)
3.40	D		(0.20)	3.50	
3.50	SPT	N=3 (1,0/1,1,1,0)		3.70	
3.50	ES				
3.50	PID	0ppm			Brown mottled reddish brown slightly gravelly clay becoming gravelly at 3.00m bgl. Gravel is angular to sub-angular fine of glass, red brick, and chalk fragments with flint from 3.00m bgl. (MADE GROUND)
3.50-3.95	D		(1.50)		
4.00	PID	0ppm			
4.50	SPT	N=9 (5,3/3,2,1,3)			
4.50	PID	0ppm			
4.50-4.95	D			5.20	Black organic clay with occasional coal and glass fragments. (MADE GROUND)
5.00	PID	0ppm			
5.20	D				Brown mottled reddish brown gravelly clay. Gravel is angular to sub-angular fine of flint and glass, red brick, and chalk fragments. (MADE GROUND)
5.50-5.95	U				
5.50-6.00	B				
6.00	SPT	N=3 (1,0/1,0,1,1)	(2.10)		Grey/brown CLAY becoming sandy at 6.00m bgl. (ALLUVIUM)
6.00	PID	0ppm			
6.00-6.45	D				
6.20	ES				
6.50-6.95	U				
7.00	D				
7.00	PID	0ppm		7.30	Brown/reddish brown PEAT. (ALLUVIUM)
7.30	D				
7.50	SPT	N=6 (1,1/2,1,1,2)			
7.50-7.95	D				
7.50-8.00	B				
8.00	PID	0ppm			
8.50-8.95	U		(2.30)		
9.00	D				
9.00	PID	0ppm			
9.50	SPT	N=11 (1,2/3,2,3,3)		9.60	Dark grey/brown sandy angular to rounded fine to coarse GRAVEL of flint.
9.50	ES				
9.50-9.95	D				

Continued on next sheet

Remarks
Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.60	5.00	6.40

BOREHOLE LOG

Borehole No. **BH4**
Sheet 2 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date:	28/10/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date:	29/10/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB		Pipe Diameter (mm): 50	1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Description Of Strata
		9.60	D					(SHEPPERTON GRAVEL MEMBER)
		10.00	PID	0ppm				
		10.00-10.50	B					
		11.00	PID	0ppm				
		11.00	SPT	50 (4,6/50 for 255mm)				
		11.00-11.50	B			(3.40)		
		12.00	PID	0ppm				
		12.00	D					
		12.50	SPT	N=32 (2,3/4,6,9,13)				
		12.50-13.00	B				13.00	Grey/brown fine to coarse SAND. (SHEPPERTON GRAVEL MEMBER)
		12.70	ES					
		13.00	PID	0ppm		(0.80)		
		13.50	D					
		14.00	PID	0ppm			13.80	Grey/brown gravelly fine to coarse SAND. Gravel is angular to sub-rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
		14.00	SPT	N=15 (2,2/3,4,3,5)		(0.90)		
		14.00-14.50	B					
		15.00	PID	0ppm			14.70	Grey/brown sandy sub-angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		15.00	D					
		15.50	SPT	50 (9,11/50 for 95mm)				
		15.50-16.00	B			(2.30)		
		16.00	PID	0ppm				
		16.50	D					
		17.00	SPT	N=34 (4,5/6,8,9,11)			17.00	Grey/brown fine to coarse SAND. (SHEPPERTON GRAVEL MEMBER)
		17.00	PID	0ppm		(1.00)		
		17.00-17.50	B					
		18.00	D				18.00	Grey/brown sandy sub-angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		18.00	PID	0ppm		(0.60)		
		18.50	SPT	50 (25 for 95mm/50 for 100mm)		(0.40)	18.60	Grey/brown fine SAND. (SHEPPERTON GRAVEL MEMBER)
		18.50-19.00	B				19.00	Grey/brown fine to medium SAND. (SHEPPERTON GRAVEL MEMBER)
		19.00	PID	0ppm				
		19.00	D					
		19.10	ES			(1.50)		
		20.00	PID	0ppm				

Continued on next sheet

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.60	5.00	6.40

BOREHOLE LOG

Borehole No. **BH4**
Sheet 3 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 28/10/2014	Casing Diameter (mm)	Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 29/10/2014			Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50		1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		20.00	SPT	50 (25 for 35mm/50 for 55mm)					
		20.00-20.45	D				20.50		Grey/brown slightly gravelly fine to medium SAND. Gravel is angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
		20.50	D						
		21.00	PID	0ppm					
		21.50	SPT	50 (25 for 80mm/50 for 55mm)		(1.80)			
		21.50-21.95	D						
		21.50-22.00	B						
		22.00	PID	0ppm			22.30		Dark grey silty fine SAND. (THANET SAND FORMATION)
		22.30	D						
		23.00	SPT	50 (25 for 75mm/50 for 85mm)					
		23.00	PID	0ppm					
		23.00-23.50	B			(2.70)			
		24.00	D						
		24.00	PID	0ppm					
		24.50	SPT	50 (25 for 120mm/50 for 150mm)					
		24.50-24.95	D				25.00		End of borehole at 25.00 m
		24.50-25.00	B						
		25.00	PID	0ppm					

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
9.60	5.00	6.40

BOREHOLE LOG

Borehole No. **BH5**
Sheet 1 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method: Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 04/11/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 06/11/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50	1:50

Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Description Of Strata
				(0.08) (0.10)	0.08	Brick paving. (CONCRETE)
0.20	D				0.18	Light yellowish brown slightly gravelly fine to medium sand. Gravel is angular to sub-angular fine of flint. (MADE GROUND)
0.20-0.50	B					
0.50	PID	0ppm				
0.60	ES					
1.00	D					
1.00	PID	0ppm		(2.02)		Brown slightly gravelly fine to medium sand. Gravel is angular to sub-angular fine of flint. (MADE GROUND)
1.50	PID	0ppm				
1.50	SPT	N=7 (2,3/2,2,2,1)				
1.50-1.95	D					
1.50-2.00	B				2.20	
2.20	D			(0.30)		Brown clayey gravelly fine to medium sand. (MADE GROUND)
2.30	ES				2.50	
2.50	SPT	N=10 (2,1/2,3,2,3)		(0.50)		Reddish brown gravelly fine to medium sand. Gravel is angular to sub-angular fine of flint. (MADE GROUND)
2.50	PID	1ppm			3.00	
2.50-2.95	D					
2.50-3.00	B					
3.00	PID	0ppm		(1.00)		Light brown gravelly fine to medium sand. Gravel is angular to rounded fine of flint. (MADE GROUND)
3.20	D					
3.50	PID	0ppm				
3.50	SPT	N=7 (2,1/2,2,2,1)			4.00	
3.50-3.95	D			(0.80)		Black/dark brown clayey gravelly ASH. Gravel is angular to rounded fine to medium of flint with rare wire fragment. (MADE GROUND)
3.50-4.00	B					
4.00	PID	0ppm			4.80	
4.00	D					Dark grey/brown mottled reddish brown CLAY. (ALLUVIUM)
4.10	ES					*Organic odour recorded.*
4.50	SPT	N=9 (4,1/2,2,2,3)				
4.50	PID	0ppm				
4.50-4.80	B					
4.50-4.95	D					
4.80	D			(2.40)		
5.00	PID	0ppm				
5.00-5.50	B					
5.50-5.95	U					
6.00	D					
6.00	PID	0ppm				
6.50	SPT	N=5 (1,2/1,1,2,1)		(0.20)	7.20	
6.50-6.95	D				7.40	Dark grey/brown mottled reddish brown peaty CLAY. (ALLUVIUM)
7.00	PID	0ppm				
7.20	D					Dark brown/brown PEAT. (ALLUVIUM)
7.50-7.95	U					
8.00	D			(1.50)		
8.00	PID	0ppm				
8.00-8.50	B					
8.50	SPT	N=10 (1,2/2,2,3,3)				
8.50-8.90	B				8.90	
8.50-8.95	D					Grey/brown sandy angular to rounded fine to medium GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
8.80	ES					
8.90	D					
9.00	PID	0ppm				
9.50	ES					

Continued on next sheet

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
8.90	8.90	6.00

BOREHOLE LOG

Borehole No. **BH5**
Sheet 2 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method: Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 04/11/2014	Casing Diameter (mm) / Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 06/11/2014		Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50	1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		9.50	SPT	N=9 (2,2/2,2,3,2)					
		9.50-10.00	B						
		10.00	PID	0ppm					
		10.50	D						
		11.00	SPT	N=22 (3,4/5,7,5,5)					
		11.00	PID	0ppm					
		11.00-11.50	B			(4.10)			
		12.00	D						
		12.00	PID	0ppm					
		12.50	SPT	N=36 (4,6/7,9,10,10)					
		12.50-13.00	B				13.00		Grey/brown gravelly fine to coarse SAND. Gravel is angular to rounded fine to medium of flint. (SHEPPERTON GRAVEL MEMBER)
		13.00	PID	0ppm		(0.50)			
		13.50	B				13.50		Grey/brown sandy angular to rounded GRAVEL of flint. (SHEPPERTON GRAVEL MEMBER)
		14.00	SPT	50 (5,7/50 for 210mm)					
		14.00	PID	0ppm					
		14.00-14.50	B			(2.50)			
		15.00	PID	0ppm					
		15.00	D						
		15.50	SPT	50 (25 for 135mm/50 for 285mm)					
		15.50-16.00	B				16.00		Grey/brown slightly gravelly fine to medium SAND. (SHEPPERTON GRAVEL MEMBER)
		16.00	PID	0ppm					
		16.50	D						
		17.00	SPT	50 (4,6/50 for 205mm)		(1.80)			
		17.00	PID	0ppm					
		17.00-17.50	B						
		17.80	D				17.80		Dark grey/brown fine sand with rare rounded fine gravel of flint and shell fragments from 17.80 to 20.50m bgl. (SHEPPERTON GRAVEL MEMBER)
		18.00	PID	0ppm					
		18.50	SPT	50 (25 for 105mm/50 for 75mm)					
		18.50-18.95	D			(3.70)			
		18.50-19.00	B						
		19.00	PID	0ppm					
		19.50	D						
		20.00	PID	0ppm					

Continued on next sheet

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
8.90	8.90	6.00

BOREHOLE LOG

Borehole No. **BH5**
Sheet 3 of 3

Project Name:	London City Airport - Western Terminal Extension	Coordinates	Drilling Method:	Dando 2000		Hole Type
Project No.	HLEI32363	Northings:	Start Date: 04/11/2014	Casing Diameter (mm)	Casing Depth (m)	CP
Location:	London City Airport	Eastings:	End Date: 06/11/2014			Scale
Client:	London City Airport	Ground Level: m AOD	Logged By: RB	Pipe Diameter (mm): 50		1:50

Well	Water Strikes	Samples & In Situ Testing: Depth (m)	Type	Results	Level (m AOD)	Thickness (m)	Depth (m)	Legend	Description Of Strata
		20.00	SPT	50 (25 for 95mm/50 for 70mm)					
		20.00-20.45	D						
		20.00-20.50	B						
		21.00	D						
		21.00	PID	0ppm					
		21.50	SPT	50 (25 for 50mm/50 for 70mm)			21.50		Dark greenish grey silty fine SAND. (THANET SAND FORMATION)
		21.50-21.95	D						
		21.50-22.00	B						
		22.00	PID	0ppm					
		22.50	ES						
		22.50	D						
		23.00	SPT	50 (25 for 105mm/50 for 90mm)		(3.50)			
		23.00	PID	0ppm					
		23.00-23.45	D						
		23.00-23.50	B						
		24.00	D						
		24.00	PID	0ppm					
		24.50	SPT	50 (25 for 85mm/50 for 95mm)					
		24.50-24.95	D				25.00		End of borehole at 25.00 m
		24.50-25.00	B						
		25.00	PID	0ppm					

Remarks

Hole terminated at target depth of 25.00m bgl.

Chiseling Details

Time Taken	Depth From (m)	Depth To (m)	Tool Used

Groundwater Notes

Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
8.90	8.90	6.00

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Borehole No

BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	17/11/16	4.77	E 542413.4 N 180267.9	34.60m

Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	34.60	RC	10/11/2016	17/11/2016	TC	CB	112	PDC	Geotec 350	AR779

WATER STRIKES

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)

WATER ADDED

From (m)	To (m)

CHISELLING / SLOW DRILLING

From (m)	To (m)	Duration (hr)	Remarks

HOLE

Depth (m)	Diameter (mm)
0.00	146
34.60	146

CASING

Depth (m)	Diameter (mm)
0.00	150
24.30	150

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.50	34.60	Cement / Bentonite Grout	17/11/2016

ROTARY RECOVERY

From (m)	To (m)	Blows	Recovery (%)
11.50	12.50		100
12.50	13.50		30
13.50	14.30		100
14.30	15.30		100
15.30	16.30		100
16.30	16.80		100
16.80	21.00		0
21.00	21.50		100
21.50	22.00		100
22.00	24.50		0
24.50	26.00		87
26.00	27.50		0
27.50	28.80		87
28.80	29.50		0
29.50	30.50		100
30.50	32.00		100
32.00	33.50		100
33.50	34.60		90

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BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	17/11/16	4.77	E 542413.4 N 180267.9	34.60m

Client

London City Airport Limited

PROGRESS

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks
15/11/16	0.00			... see Remark 3 & 4
15/11/16	21.50	17.20	3.80	
16/11/16	21.50	17.20	4.60	
16/11/16	27.50	16.80	5.10	
17/11/16	27.50	17.20	3.90	
17/11/16	34.60	24.30	8.60	

SPT DETAILS

Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
C	12.50	N37	0, 0 / 1, 7, 11, 18		
C	13.50	N50	5, 10 / 11, 13, 12, 14		
C	14.50	N50/0.135	8, 16 / 24, 26		
C	15.50	N50/0.16	4, 11 / 21, 26, 3		
C	17.00	N50/0.105	2, 8 / 25, 25		
C	18.50	N50/0.115	9, 16 / 26, 24		
C	20.00	N50/0.125	8, 12 / 26, 24		
S	21.50	N50/0.18	4, 14 / 15, 23, 12		
S	24.50	N50/0.115	12, 19 / 24, 26		
S	32.00	N48	21, 4 / 9, 10, 11, 18		
S	33.50	N50/0.085	21, 4 / 36, 14		

GENERAL REMARKS

1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
2. Clearance by UXO Magnetometer probe.
3. Water present in the borehole from casing installation through the dock.
4. Poor flush return throughout.
5. Pressuremeter tests carried out at 22.30m, 23.80m, 26.65m. Test at 29.50m depth stopped as chalk was encountered.

KEY

SAMPLES
ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS
SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinometer

HOLE TYPES
IP -Inspection Pit, TP-Trial Pit TT - Trial Trench
CP -Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
DS -Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC -Diamond Coring, CP/R-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

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BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	4.77	E 542413.4 N 180267.9	34.60m
	Date Completed 17/11/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	1 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
15/11/16									Water					
								(11.50)						

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Borehole No

BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	4.77	E 542413.4 N 180267.9	34.60m
	Date Completed 17/11/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	2 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
						-6.73		11.50						
			100					(2.00)	Very soft, dark grey SILT with strong hydrocarbon odour. (DOCK SEDIMENT)	11.70			... VOC 19.0ppm	
										11.70	ES01			
									12.20 ... becoming slightly gravelly with frequent wood fragments (<200mm). Gravel is angular to subangular fine to coarse flint.	12.50		N37	0, 0 / 1, 7, 11, 18	
			30							12.70			... VOC 0.5ppm	
										12.70	ES02			
						-8.73		13.50		13.50		N50	5, 10 / 11, 13, 12, 14	
			100						Dark brown, sandy angular to rounded fine to coarse flint GRAVEL with rare flint cobbles. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	13.50-14.00	B03			
										13.70			... VOC 0.0ppm	
										13.70	ES04			
									14.20 ... with rare wood fragments (<120mm)	14.30-15.30	B05			
			100							14.50		N50/ 135 mm	8, 16 / 24, 26	
										14.70			... VOC 0.1ppm	
								(3.30)		14.70	ES06			
										15.30-16.00	B07			
										15.50		N50/ 160 mm	4, 11 / 21, 26, 3	
			100						15.60 ... becoming very sandy	15.70			... VOC 0.1ppm	
										15.70	ES08			
			100							16.70			... VOC 0.1ppm	
						-12.03		16.80		16.70	ES09			
			0						No recovery	17.00		N50/ 105 mm	2, 8 / 25, 25	
										18.50		N50/ 115 mm	9, 16 / 26, 24	
								(4.20)						
										20.00		N50/ 125 mm	8, 12 / 26, 24	

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Borehole No

BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	4.77	E 542413.4 N 180267.9	34.60m
	Date Completed 17/11/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	3 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			0			-16.23		21.00		21.00-21.50	B10			
			100						Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND)					
15/11/16	17.20	3.80								21.50		N50/ 180 mm	4, 14 / 15, 23, 12	
16/11/16	17.20	4.60	100						21.50 ... becoming slightly clayey 21.50 - 21.80 ... with coarse gravel and cobble size flint	21.50	D11			
			0							22.30			... Pressuremeter Test at 22.30m	
										23.80			... Pressuremeter Test at 23.80m	
										24.50		N50/ 115 mm	12, 19 / 24, 26	
										24.50	D12			
										25.10	B13			
			87					(8.50)	25.20 ... with no clay					
			0							26.65			... Pressuremeter Test at 26.65m	
16/11/16	16.80	5.10												
17/11/16	17.20	3.90	87						28.20 ... with occasional pockets of dark green fine glauconitic sand	28.70	B14			
			0			-24.73		29.50		29.50			... Pressuremeter pocket aborted see Remarks	
			100	0		-25.03		29.80	Dark grey angular to subangular medium to coarse rinded flint GRAVEL. (THANET SAND FORMATION: BULLHEAD BED)					

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Borehole No

BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	10/11/16	4.77	E 542413.4 N 180267.9	34.60m
	Date Completed 17/11/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	4 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100	0					White CHALK recovered as: extremely weak, medium density silty subangular to angular white chalk COBBLES with occasional light grey marling. (SEAFORD CHALK FORMATION)					
			100	43					30.60 - 30.75 ... with occasional medium to coarse gravel size and rare cobble size angular to subangular black rinded flint 30.80 ... becoming strong and medium density 30.90 ... with a fracture 31.20 - 31.25 ... with a band of angular to subangular coarse black rinded flint gravel	31.40-31.65	C15			
									31.70 ... with a fracture infilled with coarse black rinded flint gravel	32.00		N48	21, 4 / 9, 10, 11, 18	
			100	67	57			(4.80)	31.75 ... [NI] recovered as: moderately weak, medium density off-white angular to subangular silty chalk COBBLES 32.00 - 32.20 ... [NI] recovered as: off-white soft, very gravelly SILT. Gravel is angular to subangular medium to coarse black rinded flint 32.35 - 32.40 ... with a fracture infilled with angular to subangular fine to coarse moderately weak, medium density white chalk fragments 32.45 ... with a fracture	32.70-33.00	C16			
									33.20 ... [NI] recovered as: off-white angular to subangular fine to coarse silty GRAVEL. Gravel comprises extremely weak, medium density chalk fragments and black rinded flint 33.30 - 33.50 ... with horizontal, planar, smooth fracture	33.50		N50/ 85 mm	21, 4 / 36, 14	
			90	63	63					33.80-34.10	C17			
17/11/16	24.30	8.60				-29.83		34.60						
									End of Borehole					

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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	05/01/17	4.89	E 542417.7 N 180296.2	37.50m

Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	37.50	CP	22/12/2016	05/01/2017	ST	CB			Dando 175	AR909

WATER STRIKES

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)

WATER ADDED

From (m)	To (m)
12.30	16.50
18.00	24.00
24.00	31.50

CHISELLING / SLOW DRILLING

From (m)	To (m)	Duration (hr)	Remarks
21.50	24.00	2:00	Sand
29.50	31.50	2:10	Sand
31.50	32.50	0:30	Sand

HOLE

Depth (m)	Diameter (mm)
0.00	200
24.00	200
37.50	150

CASING

Depth (m)	Diameter (mm)
0.00	200
20.50	200
27.30	150

ROTARY RECOVERY

From (m)	To (m)	Blows	Recovery (%)

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.50	37.50	Cement / Bentonite Grout	05/01/2017

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
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CONCEPT
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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	05/01/17	4.89	E 542417.7 N 180296.2	37.50m

Client

London City Airport Limited

PROGRESS

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks
22/12/16	0.00			
22/12/16	11.50	11.50	1.00	... see Remark 3
22/12/16	13.50	13.00	1.20	
22/12/16	14.50	14.20	2.00	
22/12/16	15.50	15.30	1.90	
22/12/16	16.50	16.40	2.00	
22/12/16	17.00	17.00	2.00	
03/01/17	17.00	16.50	1.50	
03/01/17	18.00	17.00	2.00	
03/01/17	19.50	17.00	2.10	
03/01/17	21.00	17.00	3.00	
03/01/17	22.50	17.00	1.50	
03/01/17	24.00	20.50	1.60	
03/01/17	24.00	24.00	2.00	
04/01/17	24.00	20.50	1.10	
04/01/17	25.50	25.40	1.60	
04/01/17	27.00	25.50	1.20	
04/01/17	28.50	25.50	3.00	
04/01/17	30.00	27.30	2.10	
04/01/17	31.50	27.30	1.60	
04/01/17	31.50	27.30	2.00	
05/01/17	31.50	27.30	2.00	
05/01/17	33.00	27.30	1.20	
05/01/17	34.50	27.30	1.50	

SPT DETAILS

Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
C	13.50	N40	5, 9 / 12, 8, 8, 12	13.00	1.20
C	14.50	N30	1, 2 / 3, 7, 8, 12	14.20	2.00
C	15.50	N16	1, 1 / 2, 4, 4, 6	15.30	1.90
C	16.50	N50/0.115	1, 7 / 22, 28	16.40	2.00
S	18.00	N50/0.085	17, 8 / 40, 10	17.00	2.00
S	19.50	N50/0.03	25 / 50	17.00	2.10
S	21.00	N50/0.135	10, 15 / 22, 28	17.00	3.00
S	22.50	N50/0.17	5, 10 / 17, 24, 9	17.00	1.50
S	24.00	N36/0.115	14, 14 / 26, 10	20.50	1.60
S	25.50	N50/0.22	4, 9 / 13, 17, 20	25.40	1.60
S	27.00	N50/0.155	8, 14 / 20, 23, 7	25.50	1.20
S	28.50	N60/0.22	8, 12 / 19, 21, 20	25.50	3.00
S	30.00	N50/0.16	5, 9 / 15, 23, 12	27.30	2.10
S	31.50	N50/0.015	20, 5 / 50	27.30	1.60
S	33.00	N37	6, 5 / 6, 8, 6, 17	27.30	1.20
S	34.50	N50/0.17	9, 7 / 13, 22, 15	27.30	1.50

GENERAL REMARKS

1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
2. Clearance by UXO Magnetometer probe.
3. Water present in the borehole from casing installation through the dock.
4. Ø200mm casing used from pontoon level to 17.00m depth. Bentonite seal inserted between 24.00m and 26.00m and borehole re-drilled with Ø150mm casing to 27.30m depth.

KEY

SAMPLES
ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS
SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinometer

HOLE TYPES
IP -Inspection Pit, TP-Trial Pit TT - Trial Trench
CP -Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
DS -Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC -Diamond Coring, CP/R-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

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CONCEPT
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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	05/01/17	4.89	E 542417.7 N 180296.2	37.50m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	1 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
22/12/16						Water					
					(11.50)						

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:45

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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	05/01/17	4.89	E 542417.7 N 180296.2	37.50m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	2 of 4

PROGRESS			STRATA				SAMPLES & TESTS				
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
22/12/16	11.50	1.00	-6.61		11.50		11.50-11.80	B01			
			-7.41		(0.80) 12.30	Dark grey slightly gravelly clayey SILT with strong hydrocarbon odour. Gravel is angular to subangular fine to coarse flint. (DOCK SEDIMENT)	11.80-12.25 12.30	UT02 D03	11 blows	89% Recovery	
22/12/16	13.00	1.20	-8.61		(1.20) 13.50	Dark grey slightly sandy silty clayey, angular to subangular fine to coarse flint GRAVEL with strong hydrocarbon odour. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	12.50-13.00 13.50 13.50-14.00	B04 B05	N40	5, 9 / 12, 8, 8, 12	
22/12/16	14.20	2.00				Yellowish brown very sandy angular to well rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	14.50 14.50-15.00	 B06	N30	1, 2 / 3, 7, 8, 12	
22/12/16	15.30	1.90			(3.00)		15.50 15.50-16.00	 B07	N16	1, 1 / 2, 4, 4, 6	
22/12/16	16.40	2.00	-11.61		16.50		16.50		N50/ 115 mm	1, 7 / 22, 28	
22/12/16 03/01/17	17.00 16.50	2.00 1.50				Light grey fine silty SAND. (THANET SAND FORMATION: THANET SAND)	16.50-17.00 17.50-18.00	B08 B09			
03/01/17	17.00	2.00					18.00 18.00 18.50-19.00	 D10 B11	N50/ 85 mm	17, 8 / 40, 10	
03/01/17	17.00	2.10					19.50 19.50	 D12	N50/ 30 mm	25 / 50	

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	4.89	E 542417.7 N 180296.2	37.50m
	Date Completed 05/01/17			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	3 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
							20.50-21.00	B13			
03/01/17	17.00	3.00					21.00		N50/ 135 mm	10, 15 / 22, 28	
						21.00 ... becoming slightly clayey	21.00	D14			
							21.50-22.00	B15			
						21.50 ... becoming clayey					
03/01/17	17.00	1.50					22.50		N50/ 170 mm	5, 10 / 17, 24, 9	
							22.50	D16			
					(13.50)						
							23.50-24.00	B17			
03/01/17	20.50	1.60					24.00		N36/ 115 mm	14, 14 / 26, 10	
04/01/17	20.50	1.10									
							24.00	D18			
							24.50-25.00	B19			
						24.50 ... becoming very clayey					
04/01/17	25.40	1.60					25.50		N50/ 220 mm	4, 9 / 13, 17, 20	
							25.50	D20			
							26.50-27.00	B21			
04/01/17	25.50	1.20					27.00		N50/ 155 mm	8, 14 / 20, 23, 7	
							27.00	D22			
							27.50-28.00	B23			
04/01/17	25.50	3.00					28.50		N60/ 220 mm	8, 12 / 19, 21, 20	
							28.50	D24			
							29.50-30.00	B25			
04/01/17	27.30	2.10	-25.11		30.00		30.00		N50/ 160 mm	5, 9 / 15, 23, 12	

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Borehole No

BH04

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	22/12/16	05/01/17	4.89	E 542417.7 N 180296.2	37.50m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	4 of 4

PROGRESS			STRATA				SAMPLES & TESTS				
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			-25.21		30.10	Black angular to subangular fine to coarse rinded flint GRAVEL. (THANET SAND FORMATION: BULLHEAD BED)	30.00	D26			
							30.00-30.50	B27			
						White CHALK recovered as: silty angular to subangular fine to coarse GRAVEL. Gravel comprises weak medium density white chalk fragments and black rinded flint. (SEAFORD CHALK FORMATION)	31.00-31.50	B28			
04/01/17	27.30	1.60					31.50		N50/ 15 mm	20, 5 / 50	
05/01/17	27.30	2.00									
							31.50	D29			
							32.50-33.00	B30			
05/01/17	27.30	1.20					33.00		N37	6, 5 / 6, 8, 6, 17	
						33.00 ... [NI] recovered as: white slightly gravelly SILT. Gravel comprises fine to medium weak medium density chalk fragments and black rinded flint	33.00	D31			
					(7.40)		34.00-34.50	B32			
						34.00 ... with rare cobble size black rinded flint					
05/01/17	27.30	1.50					34.50		N50/ 170 mm	9, 7 / 13, 22, 15	
						34.50 ... [NI] recovered as: slightly gravelly SILT. Gravel comprises angular to subangular fine to medium weak medium density chalk fragments	34.50	D33			
			-32.61		37.50						
						37.49 ... [NI] recovered as: firm, white slightly gravelly SILT. Gravel comprises weak medium density angular to subangular fine to coarse chalk fragments and black rinded flint					
						End of Borehole					

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
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CONCEPT
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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	33.95	CP	19/12/2016	21/12/2016	ST	CB			Dando 175	AR909

WATER STRIKES

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)

WATER ADDED

From (m)	To (m)
17.00	26.00

CHISELLING / SLOW DRILLING

From (m)	To (m)	Duration (hr)	Remarks

HOLE

Depth (m)	Diameter (mm)
0.00	200
24.50	200
33.95	150

CASING

Depth (m)	Diameter (mm)
0.00	200
17.00	200
25.00	150

ROTARY RECOVERY

From (m)	To (m)	Blows	Recovery (%)

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.90	33.95	Cement / Bentonite Grout	

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
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CONCEPT
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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client

London City Airport Limited

PROGRESS

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks
19/12/16	0.00			
19/12/16	12.10	11.90	1.20	... see Remark 3
19/12/16	13.00	12.50	2.00	
19/12/16	14.00	13.50	2.50	
19/12/16	15.00	14.60	2.70	
19/12/16	15.50	15.50	2.70	
20/12/16	15.50	15.50	2.00	
20/12/16	16.00	15.50	2.00	
20/12/16	17.00	16.50	1.90	
20/12/16	18.50	17.00	1.60	
20/12/16	20.00	17.00	1.00	
20/12/16	21.50	17.00	1.30	
20/12/16	23.00	17.00	1.00	
20/12/16	24.50	17.00	1.50	
20/12/16	26.00	25.00	2.00	
21/12/16	26.00	25.00	1.00	
21/12/16	27.50	25.00	1.00	
21/12/16	29.00	25.00	1.60	
21/12/16	30.50	25.00	1.80	
21/12/16	32.00	25.00	3.00	
21/12/16	33.50	25.00	2.00	
21/12/16	33.95	25.00	2.00	

SPT DETAILS

Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
C	13.00	N12	3, 2 / 3, 4, 2, 3	12.50	2.00
C	14.00	N44	5, 14 / 13, 8, 12, 11	13.50	2.50
C	15.00	N53/0.23	1, 3 / 3, 15, 25, 10	14.60	2.70
S	16.00	N50/0.135	1, 2 / 17, 33	15.50	2.00
S	17.00	N50/0.07	12, 13 / 50	16.50	1.90
S	18.50	N50/0.07	13, 12 / 50	17.00	1.60
S	20.00	N50/0.22	6, 8 / 15, 17, 18	17.00	1.00
S	21.50	N50/0.17	8, 14 / 19, 20, 11	17.00	1.30
S	23.00	N50/0.2	6, 14 / 17, 23, 10	17.00	1.00
S	24.50	N50/0.275	4, 7 / 13, 13, 14, 10	17.00	1.50
S	26.00	N50/0.19	6, 12 / 14, 22, 14	25.00	2.00
S	27.50	N50/0.18	7, 12 / 16, 25, 9	25.00	1.00
S	29.00	N50	7, 8 / 10, 12, 10, 18	25.00	1.60
S	30.50	N50	4, 5 / 4, 19, 12, 15	25.00	1.80
S	32.00	N36	4, 5 / 7, 8, 8, 13	25.00	3.00
S	33.50	N50	5, 5 / 10, 15, 12, 13	25.00	2.00

GENERAL REMARKS

1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
2. Clearance by UXO Magnetometer probe.
3. Water present in the borehole from casing installation through the dock.
4. Ø200mm casing used from pontoon level to 17.00m depth. Bentonite seal inserted between 22.50m and 24.50m and borehole re-drilled with Ø150mm casing to 25.00m depth.

KEY

SAMPLES
ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS
SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinometer

HOLE TYPES
IP -Inspection Pit, TP-Trial Pit TT - Trial Trench
CP -Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
DS -Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC -Diamond Coring, CP/R-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:43

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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	1 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
19/12/16						Water					
					(11.90)						

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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	2 of 4

PROGRESS			STRATA				SAMPLES & TESTS				
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			-7.22		11.90						
19/12/16	11.90	1.20	-7.82		(0.60) 12.50	Soft, dark grey clayey SILT. (DOCK SEDIMENT)	12.10-12.55 12.50-13.00	UT01 B02	10 blows	100% Recovery	
			-7.87		12.55	Yellowish brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse flint. (RIVER TERRACE DEPOSITS)	12.50	D03			
19/12/16	12.50	2.00				Dark grey sandy GRAVEL with strong hydrocarbon odour. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	13.00 13.00-13.50	B04	N12	3, 2 / 3, 4, 2, 3	
19/12/16	13.50	2.50			(3.45)	13.00 ... becoming clayey with rare angular to subangular flint cobbles and rare pieces of plastic 14.00 ... becoming very sandy with no clay and no hydrocarbon odour	14.00 14.00-14.50	B05	N44	5, 14 / 13, 8, 12, 11	
19/12/16	14.60	2.70				15.00 ... with a pocket of soft brown clay (<40mm)	15.00 15.00-15.50	B06	N53/ 230 mm	1, 3 / 3, 15, 25, 10	
19/12/16	15.50	2.70									
20/12/16	15.50	2.00									
20/12/16	15.50	2.00	-11.32		16.00		16.00		N50/ 135 mm	1, 2 / 17, 33	
						Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND)	16.00 16.00-16.50	D07 B08			
20/12/16	16.50	1.90					17.00		N50/ 70 mm	12, 13 / 50	
							17.00 17.50-18.00	D09 B10			
20/12/16	17.00	1.60					18.50		N50/ 70 mm	13, 12 / 50	
							18.50 19.00-20.00	D11 B12			
						19.00 ... becoming slightly clayey					
20/12/16	17.00	1.00					20.00		N50/ 220 mm	6, 8 / 15, 17, 18	

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
01	AN	OS	03/03/2017 18:02

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CONCEPT
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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	3 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
							20.00	D13			
							20.50-21.00	B14			
20/12/16	17.00	1.30					21.50		N50/ 170 mm	8, 14 / 19, 20, 11	
							21.50	D15			
							22.00-22.50	B16			
						22.00 ... becoming clayey					
					(12.80)						
20/12/16	17.00	1.00					23.00		N50/ 200 mm	6, 14 / 17, 23, 10	
							23.00	D17			
							23.50-24.00	B18			
20/12/16	17.00	1.50					24.50		N50/ 275 mm	4, 7 / 13, 13, 14, 10	
							24.50	D19			
							25.00-25.50	B20			
						25.00 ... becoming very clayey					
20/12/16	25.00	2.00					26.00		N50/ 190 mm	6, 12 / 14, 22, 14	
21/12/16	25.00	1.00									
							26.00	D21			
							26.50-27.00	B22			
21/12/16	25.00	1.00					27.50		N50/ 180 mm	7, 12 / 16, 25, 9	
							27.50-27.90	D23			
							28.00-28.50	B24			
			-24.12		28.80		28.80-29.00	D25			
21/12/16	25.00	1.60	-24.32		29.00	Black angular to subangular fine to coarse rinded flint GRAVEL. (THANET SAND FORMATION: BULLHEAD BED)	29.00		N50	7, 8 / 10, 12, 10, 18	
							29.00-29.50	D26			
						White CHALK recovered as: firm, white gravelly SILT. Gravel is angular to subangular fine to coarse black rinded flint. (SEAFORD CHALK FORMATION)	29.50-30.00	B27			

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Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	19/12/16	4.68	E 542452.3 N 180279.1	33.95m
	Date Completed 21/12/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Cable Percussion	4 of 4

PROGRESS			STRATA				SAMPLES & TESTS				
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
21/12/16	25.00	1.80			(4.95)	29.50 ... [NI] recovered as: silty angular to subangular fine to coarse GRAVEL with rare black rinded flint cobbles. Gravel comprises weak, medium density chalk fragments and black rinded flint 30.50 ... [NI] recovered as: soft, white gravelly SILT. Gravel is angular to subangular fine to coarse black rinded flint	30.50 30.50-30.95 31.00-31.50	D28 B29	N50	4, 5 / 4, 19, 12, 15	
21/12/16	25.00	3.00				32.00 ... [NI] recovered as: firm, white slightly gravelly SILT. Gravel is angular to subangular fine to coarse weak, medium density chalk fragments 32.50 ... with no black rinded flint cobbles	32.00 32.00-32.50 32.50-33.00	D30 B31	N36	4, 5 / 7, 8, 8, 13	
21/12/16	25.00	2.00				33.50 ... [NI] recovered as: white slightly gravelly SILT. Gravel is angular to subangular fine to coarse weak, medium density chalk fragments	33.50 33.50-33.95	D32	N50	5, 5 / 10, 15, 12, 13	
21/12/16	25.00	2.00	-29.27		33.95	End of Borehole					

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	01/12/16	5.69	E 542560.3 N 180240.5	30.80m

Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	1.20	IP	24/11/2016	24/11/2016	JB	CB			Hand Excavated	
1.20	15.20	DS	24/11/2016	29/11/2016	JB	CB			Comacchio 405	C1
15.20	30.80	RC	29/11/2016	01/12/2016	JB	CB	112	PDC	Comacchio 405	C1

WATER STRIKES

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)

WATER ADDED

From (m)	To (m)

CHISELLING / SLOW DRILLING

From (m)	To (m)	Duration (hr)	Remarks

HOLE

Depth (m)	Diameter (mm)
0.00	200
5.20	200
14.50	150
30.80	146

CASING

Depth (m)	Diameter (mm)
0.00	200
5.20	200
14.50	150

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour
15.20	20.30	Water	98	
20.30	30.80	Water	95	

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation
SPGW	50	10.00	2.00	10.00	01/12/2016
SPGW	50	23.70	12.70	23.70	01/12/2016

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
0.00	0.30	Concrete / Flush cover	01/12/2016
0.30	2.00	Bentonite pellets	
2.00	10.00	Pea shingle	
10.00	12.00	Bentonite pellets	
12.00	23.70	Pea shingle	
23.70	30.80	Bentonite pellets	

ROTARY RECOVERY

From (m)	To (m)	Blows	Recovery (%)
1.20	2.20		100
2.20	3.20		100
3.20	4.20		0
4.20	5.20		100
5.20	6.20		80
6.20	7.20		100
7.20	8.20		50
8.20	9.20		80
9.20	10.20		100
10.20	11.20		60
11.20	12.20		100
12.20	13.20		80
13.20	14.20		100
14.20	15.20		100
15.20	17.30		24
17.30	18.80		100
18.80	20.30		100
20.30	21.80		100
21.80	23.30		100
23.30	24.80		100
24.80	26.30		67
26.30	27.80		100
27.80	29.30		90
29.30	30.80		100

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	01/12/16	5.69	E 542560.3 N 180240.5	30.80m

Client

London City Airport Limited

PROGRESS

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks
24/11/16	0.00			
24/11/16	4.20	4.20		
25/11/16	4.20	4.20		
25/11/16	7.20	7.20		
28/11/16	7.20	7.20		
28/11/16	14.20	14.50		
29/11/16	14.20	14.50		
29/11/16	20.30	14.50		
30/11/16	20.30	14.50		
30/11/16	30.80	14.50		

SPT DETAILS

Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
S	1.20	N5	1, 2 / 1, 1, 2, 1	0.00	
S	2.20	N4	1, 1 / 1, 1, 1, 1	0.00	
S	3.20	N4	1, 2 / 2, 0, 1, 1	0.00	
S	4.20	N8	2, 2 / 2, 1, 3, 2	4.20	
S	5.20	N7	1, 2 / 1, 2, 2, 2	5.20	
S	6.20	N2	0, 0 / 1, 0, 0, 1	5.20	
S	7.20	N0	0, 0 / 0, 0, 0, 0	7.20	
S	8.20	N0	0, 0 / 0, 0, 0, 0	8.20	
S	9.20	N0	0, 0 / 0, 0, 0, 0	9.20	
S	10.20	N0	0, 0 / 0, 0, 0, 0	10.20	
C	11.20	N54	4, 8 / 13, 13, 14, 14	11.20	
C	12.20	N47	3, 7 / 9, 12, 13, 13	12.20	
C	13.20	N12	1, 2 / 2, 2, 4, 4	13.20	
C	14.20	N52	3, 4 / 6, 14, 16, 16	14.50	
C	15.20	N50/0.18	9, 11 / 14, 18, 18	14.50	
C	17.30	N50/0.115	10, 10 / 25, 25	14.50	
C	18.80	N50/0.105	11, 9 / 27, 23	14.50	
C	20.30	N50/0.245	5, 11 / 12, 13, 17, 8	14.50	
S	21.80	N37	3, 4 / 7, 9, 10, 11	14.50	
S	23.30	N39	4, 5 / 6, 10, 11, 12	14.50	
S	24.80	N38	4, 6 / 7, 8, 10, 13	14.50	
S	27.80	N50/0.105	3, 15 / 20, 30	14.50	
S	29.30	N28	5, 6 / 6, 6, 6, 10	14.50	
S	30.80	N35	5, 6 / 7, 8, 9, 11	14.50	

GENERAL REMARKS

1. Inspection pit hand excavated prior to boring.
2. Clearance by UXO Magnetometer probe.
3. Dynamic sampling techniques used from 1.20m to 15.20m. Rotary boring carried out thereafter.
4. Pressuremeter tests carried out at 15.80m and 25.40m depths.

KEY

SAMPLES
ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS
SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinometer

HOLE TYPES
IP -Inspection Pit, TP-Trial Pit TT - Trial Trench
CP -Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
DS -Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC -Diamond Coring, CP/R-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	5.69	E 542560.3 N 180240.5	30.80m
	Date Completed 01/12/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	1 of 6

PROGRESS

Date	Casing	Water
24/11/16		
24/11/16	4.20	
25/11/16	4.20	

STRATA

TCR %	SCR %	RQD %	Level (mOD)	Depth (Thickness)	Strata Description
				(0.40)	CONCRETE (0.30m) over concrete rubble.
			5.29	0.40	
				(0.35)	Dark brown, clayey silty gravelly fine to coarse SAND with rare flint cobbles and a metal nail (85mm). Gravel is angular to rounded fine to coarse flint. (MADE GROUND)
			4.94	0.75	
				(1.65)	Orangish brown gravelly fine to medium SAND with rare pockets of soft, brown clay (<40mm). Gravel is angular to rounded fine to coarse flint gravel. (MADE GROUND) 1.70 ... becoming fine to coarse 1.80 ... becoming very gravelly
100			3.29	2.40	
100			3.09	2.60	Orangish brown very sandy angular to subrounded fine to coarse GRAVEL. Sand is fine to coarse. (MADE GROUND) 2.40 - 2.60 ... becoming very sandy GRAVEL. Gravel is angular to subrounded fine to coarse flint
				(0.60)	Orangish brown gravelly fine to coarse SAND. Gravel is angular to rounded fine to coarse flint. (MADE GROUND) 2.90 ... becoming fine to medium
			2.49	3.20	
0			2.39	3.30	Soft, orangish brown slightly sandy slightly gravelly silty CLAY with occasional dark grey staining. Gravel is subangular to rounded fine to medium flint. (MADE GROUND)
			2.19	3.50	Brown, slightly clayey very sandy GRAVEL. Gravel is angular to well rounded fine to coarse flint. Sand is fine to coarse. (MADE GROUND)
			1.99	3.70	Orangish brown silty very clayey fine to medium SAND. (MADE GROUND)
			1.79	3.90	Soft, orangish brown slightly sandy silty CLAY with occasional dark grey staining. (MADE GROUND)
				(0.30)	
			1.49	4.20	Dark brown gravelly fine to coarse SAND. Gravel is angular to well rounded fine to coarse flint. (MADE GROUND)
100				(0.50)	Brown, very sandy angular to well rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (MADE GROUND)
			0.98	4.70	
			0.89	4.80	Soft, yellowish brown silty CLAY with occasional to frequent dark grey staining. (MADE GROUND) 4.75 ... with occasional reddish brown fine to coarse gravel size brick fragments
			0.73	4.95	Brown very sandy angular to well rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (MADE GROUND)
				(0.70)	Brown angular to well rounded fine to coarse flint GRAVEL. (MADE GROUND) 5.05 ... with rare pockets of very soft gravelly clay. Gravel is angular to subrounded fine to medium flint 5.50 ... with occasional wood fragments (<85mm) 5.60 ... with rare tile fragments (<20mm)
80			0.03	5.65	Light brown gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. (MADE GROUND) 5.80 - 5.85 ... with a band of soft orangish brown silty clay

SAMPLES & TESTS

Depth (m)	Type No	Test Result	Field Records
0.60	ES01		... VOC 0.4ppm
1.00	ES02		... VOC 0.6ppm
1.20	D03	N5	1, 2 / 1, 1, 2, 1
1.50	ES04		... VOC 2.1ppm
1.70-2.00	B05		
2.20	D06	N4	1, 1 / 1, 1, 1, 1
2.50	ES07		... VOC 2.8ppm
3.00-3.10	B08		
3.10	B09		
3.20	D10	N4	1, 2 / 2, 0, 1, 1
3.70	D11		
4.10	ES12		... VOC 0.5ppm
4.20	D13	N8	2, 2 / 2, 1, 3, 2
5.20	D14	N7	1, 2 / 1, 2, 2, 2
5.70	ES15		... VOC 0.2ppm

Instrument/ Backfill

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	01/12/16	5.69	E 542560.3 N 180240.5	30.80m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	2 of 6

PROGRESS

Date	Casing	Water
25/11/16	7.20	
28/11/16	7.20	

STRATA

TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description
80					(0.85)	6.10 ... becoming dark grey with hydrocarbon odour and rare wood fragments (<45mm) 6.20 - 6.30 ... with a band of angular to well-rounded fine to coarse flint gravel with rare tile fragments (<55mm)
			-0.82		6.50	
						Very soft to soft, dark grey SILT with strong hydrocarbon odour. (MADE GROUND)
100			-1.02		6.70	
					(0.40)	Orangish brown gravelly fine to coarse SAND. Gravel is fine to coarse angular to rounded flint. (MADE GROUND)
			-1.42		7.10	
						Very soft to soft, dark grey clayey SILT with hydrocarbon odour. (ALLUVIUM)
50					(2.10)	
80						8.90 ... becoming soft
			-3.52		9.20	
						Soft, brownish grey silty CLAY with organic odour. (ALLUVIUM)
100					(1.80)	
60						10.70 ... becoming firm with occasional dark grey staining
			-5.32		11.00	
						Dark brown sandy GRAVEL. Gravel is angular to well rounded fine to coarse flint. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)
100					(1.50)	

SAMPLES & TESTS

Depth (m)	Type No	Test Result	Field Records
6.20		N2	0, 0 / 1, 0, 0, 1
6.50			... VOC 0.2ppm
6.50	ES16		
6.80	B17		
7.20		N0	0, 0 / 0, 0, 0, 0
7.20	D18		
7.50			... VOC 0.2ppm
7.50	ES19		
8.00	D20		
8.20		N0	0, 0 / 0, 0, 0, 0
8.20	D21		
8.50			... VOC 0.3ppm
8.50	ES22		
9.00	D23		
9.20		N0	0, 0 / 0, 0, 0, 0
9.20	D24		
9.50			... VOC 0.3ppm
9.50	ES25		
10.00	D26		
10.20		N0	0, 0 / 0, 0, 0, 0
10.20	D27		
10.50	D28		
11.20		N54	4, 8 / 13, 13, 14, 14

Instrument/ Backfill

Issue No:	Checked By:	Approved By:	Log Print Date & Time:
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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	5.69	E 542560.3 N 180240.5	30.80m
	Date Completed 01/12/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	3 of 6

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100						12.20 ... becoming slightly sandy	12.20		N47	3, 7 / 9, 12, 13, 13	
						-6.82		12.50		12.50-13.10	B29			
			80					(0.70)	Yellowish brown gravelly fine to coarse SAND with occasional flint cobbles. Gravel is angular to well rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)					
						-7.52		13.20	13.10 ... becoming very gravelly with flint cobbles	13.20		N12	1, 2 / 2, 2, 4, 4	
									Dark brown sandy GRAVEL with rare flint cobbles. Gravel is angular to well rounded fine to coarse flint. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	13.20-13.50	B30			
			100					(1.20)	13.70 ... with no sand					
28/11/16	14.50									14.20		N52	3, 4 / 6, 14, 16, 16	
29/11/16	14.50					-8.72		14.40						
						-8.82		14.50	Yellowish brown gravelly fine to coarse SAND. Gravel is angular to well rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)					
			100						Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND)	15.00-15.20	B31			
										15.20		N50/ 180 mm	9, 11 / 14, 18, 18	
										15.80			... Pressuremeter test at 15.80m depth	
			24							16.80-17.30	B32			
									16.80 ... becoming clayey					
										17.30		N50/ 115 mm	10, 10 / 25, 25	
									17.30 ... becoming slightly clayey	17.50-17.90	B33			
			100											

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	01/12/16	5.69	E 542560.3 N 180240.5	30.80m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	4 of 6

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100							18.80		N50/ 105 mm	11, 9 / 27, 23	
			100						19.50 ... becoming clayey	19.80-20.10	B34			
29/11/16	14.50									20.30		N50/ 245 mm	5, 11 / 12, 13, 17, 8	
30/11/16	14.50							(11.70)						
			100							21.00-21.50	B35			
										21.80		N37	3, 4 / 7, 9, 10, 11	
										21.80	D36			
			100							22.90-23.20	B37			
										23.30		N39	4, 5 / 6, 10, 11, 12	
									23.30 ... becoming locally very clayey	23.30	D38			
			100							24.00-24.70	B39			

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	5.69	E 542560.3 N 180240.5	30.80m
	Date Completed 01/12/16			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	5 of 6

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100							24.80		N38	4, 6 / 7, 8, 10, 13	
										24.80	D40			
										25.30-25.70	B41			
									25.30 ... becoming very clayey	25.40			... Pressuremeter test at 25.40m depth	
			67			-20.52		26.20						
						-20.62		26.30	Black angular to subangular medium to coarse rinded flint GRAVEL with rare angular to subangular rinded flint cobbles. (THANET SAND FORMATION: BULLHEAD BED)					
			100	63	53				Strong, medium density white CHALK with occasional light grey marling. (SEAFORD CHALK FORMATION) 26.60 - 26.80 ... [NI] recovered as: angular to subangular fine to coarse silty GRAVEL. Gravel comprises weak, medium density white chalk fragments and rare black rinded flint					
									27.10 - 27.25 ... [NI] recovered as: soft to firm, white gravelly SILT. Gravel comprises angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint					
										27.50-27.75	C42			
									27.50 ... with a horizontal fracture and at 27.75m					
										27.80		N50/ 105 mm	3, 15 / 20, 30	
									27.80 - 27.90 ... [NI] recovered as: soft, white gravelly SILT. Gravel is weak, medium density angular to subangular fine to coarse chalk fragments					
										27.80	D43			
									28.00 - 28.10 ... with a band of angular to subangular fine to coarse black rinded flint gravel, occasional medium to coarse gravel size extremely weak, low density chalk fragments and rare rinded flint cobbles					
									28.30 ... with occasional subhorizontal fractures and 1No horizontal fracture					
			90	66	57			(4.50)	28.55 - 28.65 ... [NI] recovered as: moderately strong, medium density white chalk COBBLES					
									28.85 ... with a subvertical fracture					
									29.00 - 29.10 ... with occasional subhorizontal fractures					
										29.30		N28	5, 6 / 6, 6, 6, 10	
									29.25 - 29.30 ... [NI] recovered as: angular to subangular fine to coarse silty GRAVEL. Gravel comprises weak, medium density white chalk fragments	29.30	D44			
									29.50 - 29.70 ... with 1No wide open fracture					
			100	63	27				29.70 - 29.80 ... with occasional subvertical fractures					

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Borehole No

BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	28/11/16	01/12/16	5.69	E 542560.3 N 180240.5	30.80m

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	6 of 6

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
									30.00 - 30.10 ... [NI] recovered as: white gravelly SILT. Gravel comprises angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint	30.10-30.40	C45			
			100	63	27				30.45 ... with 1No open horizontal fracture 30.50 ... with occasional subvertical off-white open fractures					
30/11/16	14.50					-25.12		30.80	30.70 ... [NI] recovered as: angular to subangular fine to coarse silty GRAVEL with rare moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density chalk fragments	30.80 30.80	D46	N35	5, 6 / 7, 8, 9, 11	
									End of Borehole					

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Borehole No

BH07

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	03/01/17	05/01/17	4.95	E 542513.8 N 180296.4	33.50m

Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	15.80	DS	14/12/2016	15/12/2016	TC	CB			Geotec 350	AR779
15.80	33.50	RC	15/12/2016	16/12/2016	TC	CB	112	PDC	Geotec 350	AR779

WATER STRIKES

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)

WATER ADDED

From (m)	To (m)

CHISELLING / SLOW DRILLING

From (m)	To (m)	Duration (hr)	Remarks

HOLE

Depth (m)	Diameter (mm)
0.00	150
15.80	150
33.50	146

CASING

Depth (m)	Diameter (mm)
0.00	150
13.50	150

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour
15.80	16.90	Water	20	
16.90	18.20	Water	10	
18.20	22.70	Water	0	
22.70	33.50	Water	25	

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.80	33.50	Cement / Bentonite Grout	05/01/2017

ROTARY RECOVERY

From (m)	To (m)	Blows	Recovery (%)
11.80	12.80		100
12.80	13.80		100
13.80	14.80		80
14.80	15.80		100
15.80	16.90		73
16.90	18.20		91
18.20	19.70		93
19.70	21.20		93
21.20	22.70		93
22.70	23.00		100
23.00	24.50		100
24.50	26.00		93
26.00	27.50		100
27.50	29.00		60
29.00	30.50		100
30.50	32.00		100
32.00	33.50		100

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Borehole No

BH07

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	03/01/17	05/01/17	4.95	E 542513.8 N 180296.4	33.50m

Client

London City Airport Limited

PROGRESS

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks
03/01/17	0.00			
03/01/17	12.50	12.50		... see Remark 4
03/01/17	14.80	12.50	1.80	
04/01/17	14.80	12.50	4.80	
04/01/17	15.80	13.50		... Rotary flush
04/01/17	22.70	13.50	2.10	
05/01/17	22.70	13.50	3.20	
05/01/17	33.50	13.50	2.10	

SPT DETAILS

Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
S	16.90	N50/0.075	25 / 50	13.50	
S	18.20	N50/0.095	18, 7 / 39, 11	13.50	
S	19.70	N50/0.15	8, 15 / 24, 26	13.50	
S	21.20	N50/0.16	11, 14 / 22, 26, 2	13.50	
S	23.00	N50/0.22	6, 11 / 15, 18, 17	13.50	
S	24.50	N50/0.245	3, 9 / 12, 13, 18, 7	13.50	
S	26.00	N50/0.255	6, 9 / 12, 13, 15, 10	13.50	
S	27.50	N50/0.23	7, 9 / 14, 16, 18, 2	13.50	
S	29.00	N50/0.02	25 / 50	13.50	

GENERAL REMARKS

1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
2. Clearance by UXO Magnetometer probe.
3. Dynamic sampling techniques used from 11.80m to 15.80m. Rotary boring carried out thereafter.
4. Water present in the borehole from casing installation through the dock.
5. Poor flush return throughout.

KEY

SAMPLES

ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS

SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinometer

HOLE TYPES

IP -Inspection Pit, TP-Trial Pit TT - Trial Trench
CP -Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
DS -Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC -Diamond Coring, CP/R-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

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Borehole No

BH07

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	03/01/17	4.95	E 542513.8 N 180296.4	33.50m
	Date Completed 05/01/17			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	1 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
03/01/17									Water					
								(11.80)						

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Job No	Date Started	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	03/01/17	4.95	E 542513.8 N 180296.4	33.50m
	Date Completed 05/01/17			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	2 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
						-6.86		11.80						
03/01/17	12.50		100			-7.86		(1.00) 12.80	Very soft, dark grey SILT with strong hydrocarbon odour. (DOCK SEDIMENT) 12.30 ... becoming clayey 12.50 ... becoming firm very clayey with strong hydrocarbon odour	12.00 12.00 12.50	ES01 D02		... VOC 2.5ppm	
			100			-8.36		(0.50) 13.30	Dark grey, silty very sandy angular to well rounded fine to coarse flint GRAVEL with strong hydrocarbon odour. Sand is fine to coarse (RIVER TERRACE DEPOSITS)					
			80			-9.66		(1.30) 14.60	Dark brown, gravelly fine to coarse SAND with hydrocarbon odour. Gravel is angular to rounded fine to coarse flint. (RIVER TERRACE DEPOSITS)	13.50 14.00 14.00	D03 ES04		... VOC 2.0ppm	
03/01/17 04/01/17	12.50 12.50	1.80 4.80	100			-10.41		(0.75) 15.35	Brown very sandy angular to well rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (RIVER TERRACE DEPOSITS) 14.80 ... with no sand	15.20	B05			
04/01/17	13.50		73						Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND)	16.00	B06			
			91							16.90 16.90 17.00	N50/ 75 mm D07 B08		25 / 50	
			93						19.00 ... becoming clayey	18.20 18.20 18.50	N50/ 95 mm D09 B10		18, 7 / 39, 11	
			93							19.70	N50/ 150 mm		8, 15 / 24, 26	

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16/2900	03/01/17	4.95	E 542513.8 N 180296.4	33.50m
	Date Completed 05/01/17			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	3 of 4

PROGRESS			STRATA							SAMPLES & TESTS				
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			93							19.70	D11			
										20.50	B12			
										21.20		N50/ 160 mm	11, 14 / 22, 26, 2	
			93					(12.95)		22.00	B13			
04/01/17	13.50	2.10												
05/01/17	13.50	3.20	100						22.70 ... becoming very clayey	23.00		N50/ 220 mm	6, 11 / 15, 18, 17	
										23.00	D14			
			100							24.00	B15			
										24.50		N50/ 245 mm	3, 9 / 12, 13, 18, 7	
										25.00	B16			
			93							26.00		N50/ 255 mm	6, 9 / 12, 13, 15, 10	
										26.00	D17			
			100							27.00	B18			
										27.50		N50/ 230 mm	7, 9 / 14, 16, 18, 2	
										28.00	B19			
			60			-23.36		28.30						
								(0.90)	Black angular to subangular fine to coarse rinded flint GRAVEL with rare cobbles. Cobbles are angular to subangular rinded flint. (THANET SAND FORMATION: BULLHEAD BED)	29.00		N50/ 20 mm	25 / 50	
			100	77	60	-24.26		29.20	Strong, white CHALK. (SEAFORD CHALK FORMATION) 29.30 ... with 1No horizontal fracture and at 29.40m 29.60 ... with occasional angular to subangular fine to coarse black rinded flint 29.70 ... with occasional subhorizontal and	29.50	B20			

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16/2900	03/01/17	4.95	E 542513.8 N 180296.4	33.50m
	Date Completed 05/01/17			

Client	Method/ Plant Used	Sheet
London City Airport Limited	Dynamic Sampling / Rotary	4 of 4

PROGRESS

Date	Casing	Water
05/01/17	13.50	2.10

STRATA

TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)
100	77	60			
100	73	57			(4.30)
100	73	63			
			-28.56		33.50

Strata Description

subvertical fractures
29.90 ... with 1No horizontal fracture
30.00 - 30.20 ... with occasional subvertical fractures and subhorizontal fractures
30.20 - 30.40 ... [NI] recovered as: very silty angular to subangular fine to coarse GRAVEL. Gravel comprises weak, medium density chalk fragments and black rinded flint
30.45 ... with 1No subhorizontal fracture
30.50 - 30.90 ... [NI] recovered as: very silty angular to subangular fine to coarse GRAVEL. Gravel comprises weak, medium density chalk fragments and black rinded flint
30.90 ... with 1No horizontal fracture and at 30.95m
31.10 ... with 1No wide open fracture
31.30 ... with 1No wide open fracture infilled with weak, medium density gravel size chalk fragments and angular to subangular fine to coarse black rinded flint
31.40 ... with 1No subhorizontal fracture
31.50 ... with 1No subvertical fracture
31.55 ... with 1No wide open fracture and at 31.90m
32.00 - 32.50 ... [NI] recovered as: very silty GRAVEL. Gravel comprises weak, medium density chalk fragments and angular to subangular fine to coarse black rinded flint
32.40 - 32.50 ... with angular to subangular fine to coarse black rinded flint
32.60 ... with 1No horizontal fracture infilled with angular to subangular fine to coarse gravel. Gravel comprises weak, medium density chalk fragments and rare black rinded flint cobbles
33.40 ... with 1No open fracture and at 33.45m

End of Borehole

SAMPLES & TESTS

Depth (m)	Type No	Test Result
31.60-31.90	C21	
32.00	D22	
32.60-32.90	C23	
33.00-33.40	C24	

Field Records

Instrument/ Backfill

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