

Key:

Wider Airport Site



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

Date: Oct 2017

Client: London City Airport Project: CADP 1

Figure: 4

Scale: NTS Rev: 00

Title: Historical Map Extract - 1991



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



Mr Tim Halley **Our ref:** NE/2017/126435/02-L01

London City Airport Ltd Your ref: 13/01228/FUL

<u>Tim.Halley@londoncityairport.com</u> **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



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: <u>HNLSustainablePlaces@environment-agency.gov.uk</u>

Address: Environment Agency, Ergon House, Horseferry Road, London SW1P 2AL

End 2

creating a better place



Dave Whittaker Our ref: NE/2017/126729/01-L01

London Borough of Newham Your ref: 17/00975/AOD

<u>Dave.whittaker@newham.gov.uk</u>

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.



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 2



APPENDIX C

Exploratory Hole Logs



Ground Level -5.15 m OD Equipment and Methods Cable Percussion 150 mm diameter from 0.00m to 22.80m. Drilled by E 542438.56 National Grid Logged by N 180333.51 FΜ Checked by Samples and Tests Strata Depth,Level Legend Date Time Description Records Type & No. (Thickness) Casing 0.00 S,SW = 30 1 for 60mm, 0.00 - 0.09 В2 0.00 - 0.90 0.75 - 0.85 D3 Very soft dark grey black SILT. (1.90)(ALLUVIUM) S,SW = 30,3 1 for 30mm,/1,2 1.50 D4 1.50 - 1.7185 1 50 - 2.00 1.90 --7.05 2.30 2.30 - 2.75 D6 C,N=8 1,2/1,3,2,2 В7 2.30 - 2.80 3.05 - 3.15 D8 Loose becoming medium dense dark grey slightly silty sandy to very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine (3.80)3.80 D9 3.80 - 4.25 C,N=5 2,3/2,1,1,1 to coarse of flint with rare subrounded cobbles B10 3.80 - 4.30 (RIVER TERRACE DEPOSITS) D11 4.55 - 4.65 5.30 Becomes a gravelly sand with depth. Gravel is subrounded to rounded fine and medium of 5.30 - 5.75 D12 C,N=27 2,1/2,3,8,14 5.30 - 5.80 B13 flint. Sand is fine to coarse. 5.70 --10.85 5.80 5.80 - 6.05 D14 C,50 12,13 for 25mm/39,11 5.80 - 6.30 B15 6.55 - 6.65 D16 S,50 13,12 for 20mm/39,11 for 10mm 7.30 - 7.48 D17 7.30 7.30 - 7.80 **B**18 Very dense dark green grey fine SAND. (11.60) (THANET BEDS) 8.05 - 8.15 D19 S,50 15,10 for 15mm/41,9 for 5mm 8.80 - 8.97 D20 8.80 8.80 - 9.30 B21 9.55 - 9.65 D22 Remarks Groundwater 1. Borehole drilled over 11.30m of water. No. Struck Behaviour 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 LONDON CITY AIRPORT Borehole Project 1085 **BH104** 141002 Project no. in depth column. Scale 1 : 50 Gibb Limited Sheet 1 of 3 Carried out for





Ground Level -5.15 m OD Equipment and Methods See sheet 1 Drilled by E 542438.56 National Grid Logged by Coordinates N 180333.51 Checked by FM Strata Samples and Tests Legend Depth,Level Description Date Time Type & No. Records (Thickness) Casing Water \$,50 17,8 for 15mm/37,13 for 15mm 10.30 D23 10.30 - 10.48 B24 10,30 - 10.80 10.80 - 10.90 D25 11.30 C,50 11,14 for 30mm/40,10 for 10mm 11.30 - 11.56 D26 B27 11.30 - 11.80 11.80 - 11.90 D28 C,50 14,11 for 20mm/39 for 50mm,11 for 10mm 12.30 12.30 - 12.46 D29 12.30 - 12.80 B30 12.80 - 12.90 D31 C,50 17,8 for 15mm/41,9 for 10mm (11.60) 13.30 - 13.48 D32 As sheet 1 13.30 - 13.80 13.80 - 13.90 C,50 18,7 for 15mm/44 for 50mm,6 for 5mm 14.30 14.30 - 14.45 D35 14.30 - 14.80 B36 14.80 - 14.90 D37 C,50 20,5 for 5mm/44,6 for 5mm D38 15.30 15.30 - 15.46 **B**39 15.80 - 15.90 D40 C,50 20,5 for 5mm/42,8 for 10mm 16.30 16.30 - 16.47 16.30 - 16.80 B42 D43 C,50 18,7 for 25mm/30,20 for 40mm 17.30 Very dense slightly clayey SAND. Sand is fine 17.30 -- 22.45 occasionally medium. 17.30 - 17.80 B45 (THANET BEDS) C,25 25 for 30mm,/25 for 20mm 17.80 - 17.85 17.80 17.80 --22.95 D47 C,52 9,13/22,27,3 for 5mm 18,30 B48 18.30 - 18.80 Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular D49 (5.00) fine to coarse gravel of flint. Gravel is angular to subrounded fine to coarse. (UPPER CHALK) C,50 11,14 for 30mm/24,26 for 50mm D50 19.00 19.30 - 19.53 D51 19.80 - 19.90 Remarks Groundwater No. Struck Behaviour Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets LONDON CITY AIRPORT Borehole Project 1086 **BH104** 141002 Project no. Sheet 2 of 3 Gibb Limited Carried out for



-5.15 m OD Ground Level Equipment and Methods See sheet 1 Drilled by E 542438.56 National Grid Logged by N 180333.51 Coordinates Checked by Samples and Tests Strata Legend Description Depth,Level Type & No. Records Date Time (Thickness) Casing Water 19.00 20.30 - 20.68 \$,53 7,9/11,16,26 20.80 - 20.90 D53 \$,51 8,12/19,32 19.00 21.30 - 21.60 D54 (5.00pen) As sheet 2 21.80 - 21.90 D55 \$,50 7,11/26,24 for 40mm 22.30 - 22.60 09/03/2001 19.00 22.80 --27.95 22.70 - 22.80 D57 EXPLORATORY HOLE ENDS AT 22.80 m. Groundwater 31/10/2001 10:04:54 ESGLog v2.11 No. Struck Behaviour 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 Borehole 1087 **BH104** Project no. Sheet 3 of 3 Carried out for Gibb Limited



Ground Level Equipment and Methods
Cable Percussion 150 mm diameter from 0.00m to 25.80m. Drilled by E 542406.41 National Grid Logged by JR N 180283.00 Coordinates Checked by FΜ Strata Samples and Tests Legend Description Depth,Level Date Time Type & No. Records (Thickness) Casing Water Piston Sample attempted, but failed due to obstruction (rags) in the silt. В1 0.00 - 1.00 Piston Sample attempted, but failed due to obstruction(rags) in the silt. 1.00 Probably very soft dark grey black SILT. 1.00 - 2.00 B2 (2.20) (ALLUVIUM) C,SW = 150,N=9 1,2/3,2,2,2 2.00 - 2.60 D3 2.00 2.00 - 2.50 В4 -5.25 2.20 3,50 - 3.95 D5 C,N=16 2,3/4,3,4,5 3.50 3,50 - 4.00 86 Medium dense very gravelly SAND. Sand is medium to coarse. Gravel is angular to subrounded fine (4.45)to coarse of flint. (RIVER TERRACE DEPOSITS) 5.00 - 5.45 D7 C,N=18 3,4/4,4,5,5 5.00 5.00 - 5.50 6.50 - 6.74 D9 C,50 7,14/39,11 for 15mm 6.50 6.50 - 7.00 --9.70 8.00 - 8.07 D11 8.00 Silt decreases with depth C 50 for 70mm, 8.00 - 8.50 Very dense dark green grey slightly silty SAND. (8.85)(THANET BEDS) 9.50 - 9.57 8.00 C 50 for 65mm, 9.50 - 10.00 9.50 Groundwater Remarks Borehole drilled over 9.20m of water.
 Water added to assist drilling.
Hole backfill: 0.00m to 3.00m Bentonite (b), 3.00m to 25.80m Grout (g). No. Struck Behaviour 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 Borehole 1094 **BH107** Project no. 141002 Sheet 1 of 3 Carried out for Gibb Limited





Ground Level -3.05 m OD Equipment and Methods See sheet 1 E 542406.41 Drilled by National Grid Logged by Coordinates N 180283.00 FΜ Checked by Samples and Tests Strata Depth,Level Description Type & No. Records Date Time (Thickness) Casing Water 11.00 C 50 for 70mm, 11.00 - 11.07 11.00 D18 C 50 for 65mm, 11.00 12.50 - 12.57 (8.85) 12.50 - 13.00 B19 As sheet 1 11.00 14.00 - 14.07 D20 C 50 for 70mm, B21 14.00 - 14.50 \$,50 11,14 for 40mm/20 for 50mm,30 for 65mm 11.00 15.50 -- 18.55 15.50 - 15.74 D22 15.50 - 15.70 823 11.00 17.00 - 17.06 D24 C 50 for 60mm, Very dense grey green slightly clayey SAND. B25 17.00 - 17.50 (3.60)Sand is fine. (THANET BEDS) Clay decreases with depth. 18.50 - 18.57 0.26C 50 for 70mm, B27 18.50 - 19.00 19.10 - 19.20 D28 19.10 --22.15 Very stiff dark green grey very sandy CLAY. (1.50)Sand is fine. (THANET BEDS) Remarks Groundwater No. Struck Behaviour 10:07:20 1095 Borehole Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets Project LONDON CITY AIRPORT **BH107** Project no. 141002 Sheet 2 of 3 in depth column. Gibb Limited





-3.05 m OD Ground Level Equipment and Methods See sheet 1 Drilled by E 542406.41 National Grid JR Logged by N 180283.00 Coordinates Checked by FM Samples and Tests Strata Depth,Level Legend Type & No. Description Records (Thickness) Casing S,50 15,10 for 20mm/36,14 for 20mm 20.00 - 20.19 (1.50) As sheet 2 B30 20.00 - 20.50 20.60 - 20.95 20.60 --23.65 21.10 - 21.20 S,N=55 6,6/9,12,14,20 21,60 - 22,05 D34 22.10 - 22.20 D35 \$,50 7,11/18,30,2 for 5mm 22.60 - 22.98 Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular D36 23.10 - 23.20 (5.20pen) fine to coarse gravel of flint. Gravel is angular to rounded fine to coarse. (UPPER CHALK) 23.60 - 23.95 D37 \$,50 8,12/13,24,13 for 20mm 24.10 - 24.20 D39 24,60 - 24.70 S 14,36 for 70mm D40 25.10 - 25.20 D41 25.50 - 25.88 30/03/2001 25.80 --28.85 EXPLORATORY HOLE ENDS AT 25.80 m. Remarks Groundwater No. Struck Behaviour ESGLog Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets LONDON CITY AIRPORT Borehole Project 1096 **BH107** Project no. 141002 Gibb Limited Sheet 3 of 3 Carried out for



Equipment and Methods
Cable Percussion 150 mm diameter from 0.00m to 18.50m. -4.75 m QD Ground Level Drilled by E 542475.13 JR National Grid Logged by N 180288.44 Coordinates Checked by FΜ Samples and Tests Strata Description Depth,Level Legend Type & No. Records Date Time (Thickness) Casing Water 15/03/2001 0.00 0.00 0.00 - 0.10 0.10 - 0.85 D1 P2 Probably very soft dark grey black SILT. (0.90)(ALLUVIUM) 0.90 - 1.35 0.90 0.90 16/03/2001 1.40 C,N=11 2,4/2,2,4,3 1.90 - 2.35 D5 1.90 - 2.40 86 D7 2.90 - 3.35 C,N=21 3,4/4,5,6,6 Medium dense dark brown grey very sandy GRAVEL. 88 2.90 - 3.40 Sand is medium to coarse. Gravel is angular to (4.80)subrounded fine to coarse of flint. (RIVER TERRACE DEPOSITS) 3.90 3 90 - 4 35 D9 C,N=30 4,5/6,6,8,10 3.90 - 4.40 - B10 4 90 - 5.35 D11 4.90 4.90 - 5.40 B12 C,50 19,6 for 15mm/38,12 for 15mm 5.70 5.70 - 5.88 D13 --10.45 5.70 5.70 - 6.20 814 6.70 6.70 - 6.77 D15 C 50 for 70mm, 6.70 - 7.20 816 7.70 - 7.82 D17 7.50 C 50 for 70mm,,- for 50mm Very dense dark green grey fine SAND. (11.20)(THANET BEDS) 7.70 - 8.20 B18 8.70 - 8.77D19 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 Groundwater 26/10/2001 13:06:03 ESGLog v2. Borehole drilled over 10.90m of water.
 Borehole terminated due to obstruction.
Hole backfill: 0.00m to 3.00m Bentonite (b), 3.00m to 18.50m Grout (g). No. Struck Behaviour 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. LONDON CITY AIRPORT Borehole Project 1097 **BH108** 141002 Project no. Gibb Limited Sheet 1 of 2 Carried out for Scale 1:50



Drilled by **Equipment and Methods** Ground Level 4 75 m OD E 542475.13 JR National Grid Logged by N 180288.44 FΜ Checked by Samples and Tests Strata Type & No. Records Date Description Time Casing 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 (11.20)As sheet 1 At and below 13.70m: slightly clayey 13.70 - 13.79 D29 C 50 for 60mm, 13.70 - 14.20 13.70 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 16.70 - 16.80 D36 C 27,23 for 30mm 16.70 - 17.20 16.90 --21.65 Very stiff grey sandy CLAY. Sand is fine. (THANET BEDS) (1.30)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 Recovered as: Angular fine gravel to cobble size flint fragments. 18.20 -22.95 (UPPER CHALK) 19/03/2001 (0.30pen) D40 18.20 - 18.26 C 50 for 60mm, EXPLORATORY HOLE ENDS AT 18.50 m. 18.50 -23.25 26/10/2001 13:06:12 ESGLog v2.11 Groundwater Remarks No. Struck Behaviour 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 LONDON CITY AIRPORT Project Borehole 1098 **BH108** 141002 Project no. Carried out for Gibb Limited Sheet 2 of 2



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Groundwater	l	1			Remarks	<u> </u>		
No. Struck Beha	viour							
Notes : For explan	ation of symbo	ls and	Project	L	LONDON CITY AIRPORT	Borehole		
abbreviations see li levels in metres. Si	ey sheet. All o	depths and reduced ss given in brackets	Project no). 1	11002 - 1101	Bi	1108A	
in depth column.			Carried or		Gibb Limited		eet 3 of 3	



Drilled by Equipment and Methods Ground Level -5.45 m OD Cable Percussion 150 mm diameter from 0.00m to 21.90m. E 542541.28 National Grid Logged by N 180286 95 FM Coordinates Checked by Samples and Tests Strata Type & No. Date Description Depth,Level Legend Records Time Casing Water 0.00 - 0.80 Probably very soft dark grey black SILT. (0.80) (ALLUVIUM) C,N=10 1,2/2,3,3,2 0.80 0.80 - 1.25 D2 0.80 --6.25 0.80 - 1.30 ВЗ Medium dense dark grey slightly sandy GRAVEL. Sand is medium to coarse. Gravel is angular to (1.50)subrounded fine to coarse of flint. C,N=98 3,4/6,6,9,77 (RIVER TERRACE DEPOSITS) 1.80 - 2.25 1.80 1.80 - 2.30 **B**5 2,30 2 30 - 2.41 06 C,25 25,/25 for 30mm --7.75 2.30 2.30 - 2.70 87 3.30 3.30 - 3.40 D8 C 34,16 for 20mm 89 3.30 - 3.80 D10 4.30 - 4.38 4.30 C 38,12 for 5mm 4.30 - 4.80 B11 5.30 - 5.39 D12 4.50 C 36,14 for 10mm 5.30 - 5.80 B13 Very dense dark grey SAND. Sand is fine. (THANET BEDS) (8.00)6.30 - 6.38 D14 C 41,9 for 5mm 23/03/2001 4.50 6.30 - 6.80 B15 7.30 - 7.38 D16 7.30 C 40,10 for 5mm 7.30 - 7.80 7.30 B17 W18 8.30 - 8.38 D19 8.30 C 42,8 for 5mm 8.30 - 8.80 B20 9.30 - 9.37 D21 9.30 C 50 for 70mm, 9.30 - 9.80 B22 Groundwater No. Struck Behaviour 1. Borehole drilled over 11.60m of water. Hole backfill: 0.00m to 21.90m Grout (g). 10:07: Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets Project LONDON CITY AIRPORT Borehole 1102 31/10/2001 **BH109** Project no. 141002 in depth column Gibb Limited Carried out for Sheet 1 of 3

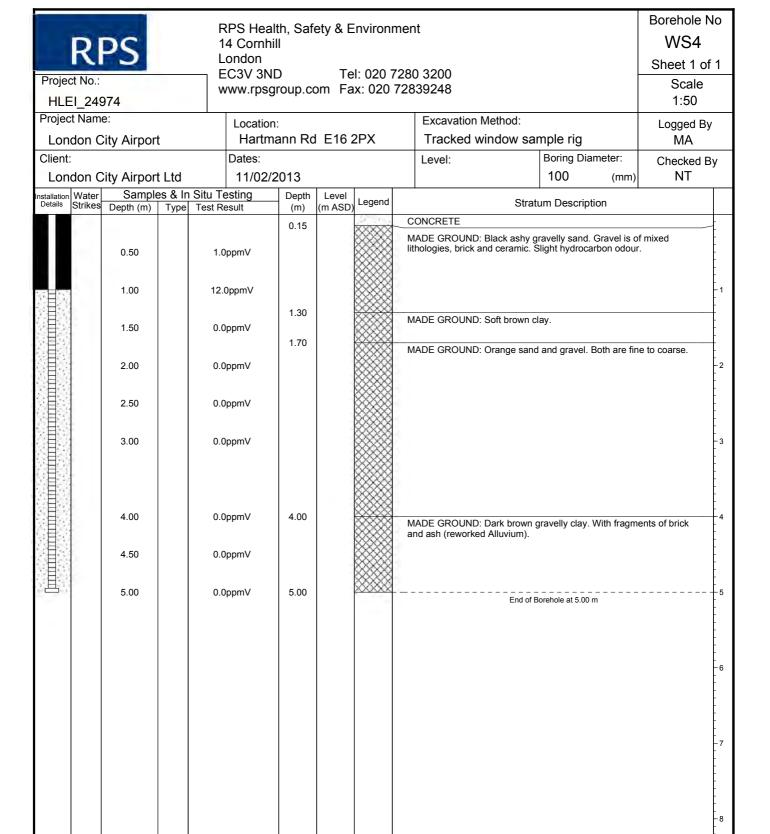


Ground Level -5.45 m OD Equipment and Methods See sheet 1 E 542541.28 National Grid Logged by N 180286 95 Coordinates Checked by FΜ Samples and Tests Strata Legend Description Туре & No. Records Date Time Casing Water As sheet 1 (8.00)10.30 D23 10.30 - 10.37 50 for 70mm, 10.30 -15.75 824 10.30 - 10.80 Very dense dark grey green clayey SAND with occasional gravel. Sand is fine to coarse. Gravel is (1.50)angular to subrounded fine and medium of flint. (RIVER TERRACE DEPOSITS) Gravels decrease with depth, becomes slightly more clayey C,50 19,6 for 15mm/27,23 for 15mm 11.80 11.80 - 11.98 D25 11.80 --17.25 Very dense clayey SAND. Sand is fine. (0.50) 11.80 - 12.30 B26 (THANET BEDS) 12.30 - 12.37 D27 12.00 C 50 for 70mm, 12.30 --17.75 12.30 - 12.80 828 Very dense fine SAND. (THANET BEDS) 13.80 - 13.89 D29 C 50 for 65mm. 13.80 - 14.30 830 Very stiff very sandy CLAY. Sand is fine. C,50 18,7 for 20mm/31,19 for 30mm 15.30 - 15.55 D31 15.30 -- 20.75 (THANET BEDS) (0.60)15.30 - 15.80 B32 Recovered as: Black angular to subangular fine to coarse gravel of flint. 15.90 - 15.95 D33 C 50 for 30mm, (UPPER CHALK) 15.90 --21.35 15.90 - 16.40 B34 16.05 --21.50 Recovered as: Black angular to subangular fine to coarse gravel of flint with some chalk (0.85)(UPPER CHALK) C,50 18,7 for 20mm/34,16 for 20mm 16.90 - 17.09 D35 15,00 16.90 --22.35 17.40 - 17.50 D36 17.90 - 18.18 D37 17.00 Recovered as: Off white grey silty GRAVEL of chalk with occasional angular to subangular 18.40 - 18.50 D38 fine to coarse gravel of flint. Gravel is (5.00)angular to rounded fine to coarse. (UPPER CHALK) 18.90 - 19.09 D39 19.40 - 19.50 19.40 - 19.90 19.90 - 20.14 D42 31/10/2001 10:07:44 ESGLog v2.11 Groundwater Remarks No. Struck Behaviour Notes: For explanation of symbols and Project LONDON CITY AIRPORT 1103 Borehole abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. **BH109** Project no. 141002 Gibb Limited Carried out for Sheet 2 of 3



Logged by JR		Equipment and Meth See sheet 1				Ground Level National Grid Coordinates	E 54254 N 18028
Checked by FA					Strata	Coordinates	.1 10020
Samples a					Strata	Depth,Level	Legeno
Depth	Type & No.	Records	Date Casing	Time Water	Description	(Thickness)	redauc
					-		
20,40 - 20,50	D43				. =		
F					<u> </u>		
_ 20.90 - 21.16	D44	S.50			As sheet 2	(5.00pen)	
	5	\$,50 9,13/17,28,5 for 10mm			As sheet 2	(0.00peri)	
	D45						
21.40 - 21.30	D4.)						
F			26/03/2001 17.00		=		
21.80 - 21.90	D46				EXPLORATORY HOLE ENDS AT 21.90 m.	21.9027.35	Γ ⁻ 11
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Groundwater No. Struck Behar	viour				Remarks		
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Notes : For explana abbreviations see H	ey sheet. All d	epths and reduced	Project		ONDON CITY AIRPORT 41002 ibb Limited	Borehole	H109
	atum micknes	s given in brackets	Project no.	14	41002 11 1 1 1		et 3 of 3

Project No			14 Lo 7 E(PS Healtl 4 Cornhill ondon C3V 3ND ww.rpsgr	Borehole WS3 Sheet 1 o Scale 1:50	of 1									
Project Na				Location:					Excavation Method:		Logged By				
	n City Airp	ort		Hartma	nn Rd	E16 2	2PX		Tracked window sar		MA				
Client:	n City Airp	ort I td		Dates: 11/02/20					Level: Boring Diameter: 1000 (mm)		Checked NT	Ву			
nstallation Wat	ter Sam	ples & In Si		sting	ng Depth Level				Strati	um Description					
Details Strik	Strikes Depth (m) Type Tes			ikes Depth (m) Type Te			sult	(m)	(m ASD)	Legend	ce	ADE GROUND: Soft brown sa pramic, ash, clinker, plastic an ADE GROUND: Gravelly cobt	andy gravelly clay. Grave d flint.		1
									sh and flint. Cobbles are brick			-2			
					3.70				ADE GROUND: Soft brown gr inker.	ravelly clay. Gravel is bri	ck, ash and	-4			
					5.00				End of B	orehole at 5.00 m		-6			
												-7 - - - - - - - - - - - - - - - - - -			
												CO CO VI dated 28th Mar 03			
 Excavation	on Hole	Type moved from		esults inal positio	n after	nossihle	 - UXO det	tect	tion.		1	6.58) Stan			
Remarks Groundw Remarks	s: vater Grou	ndwater not										HoleBASE III (Bid 42			

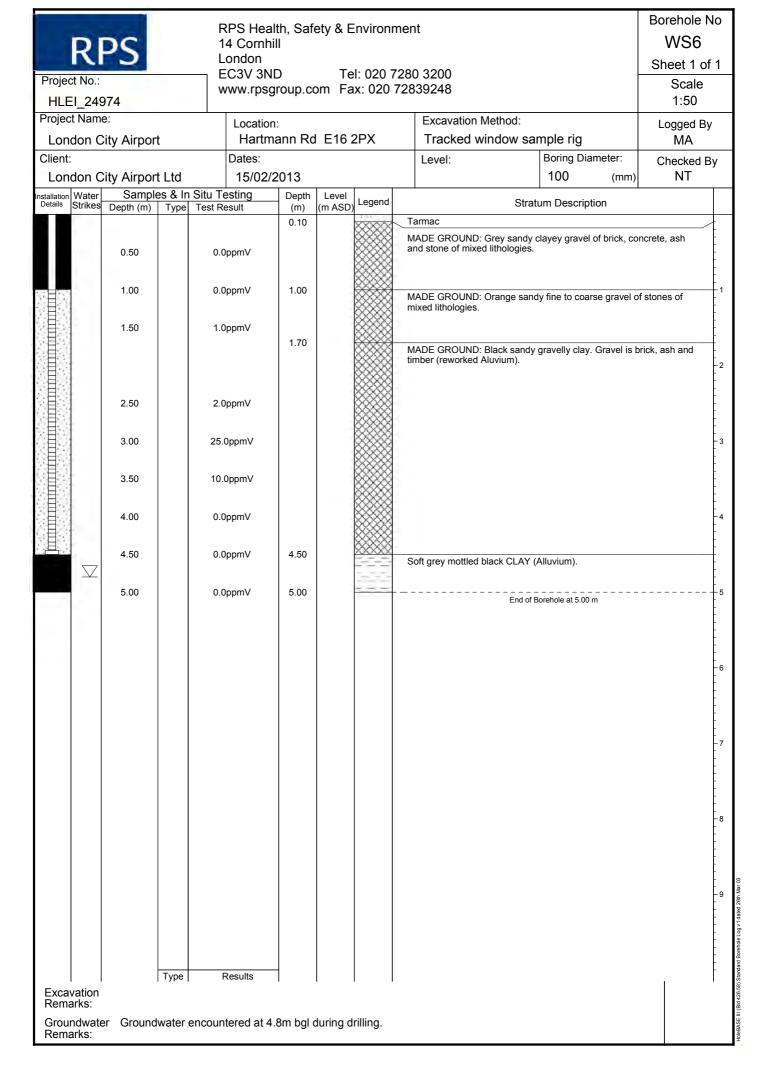


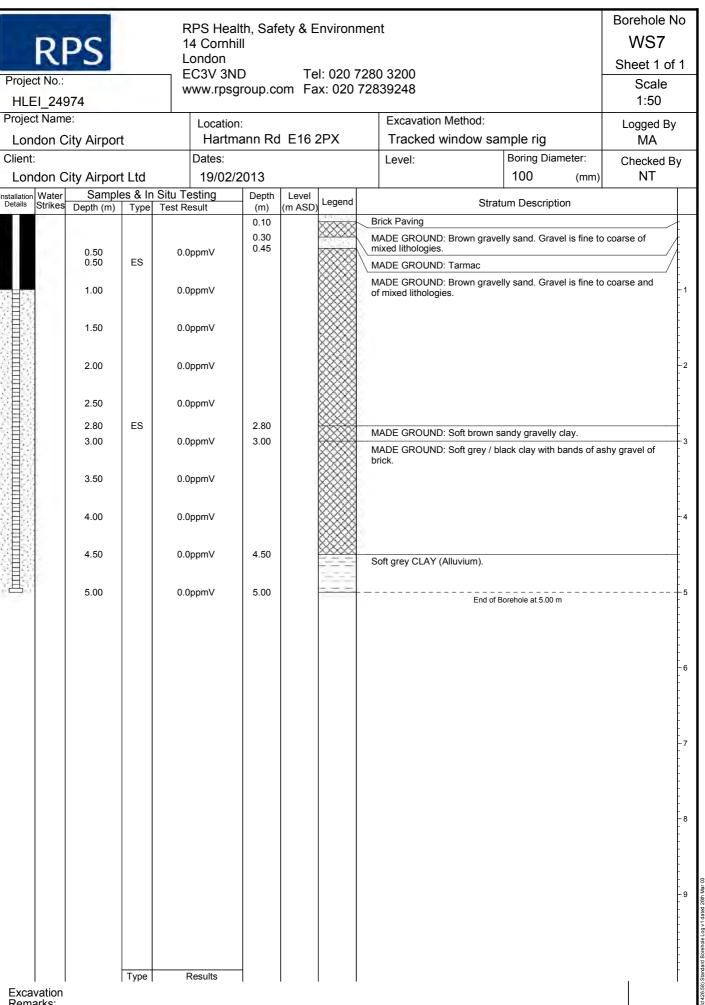
Excavation Remarks:

Groundwater Groundwater not encountered during drilling. Remarks:

Results

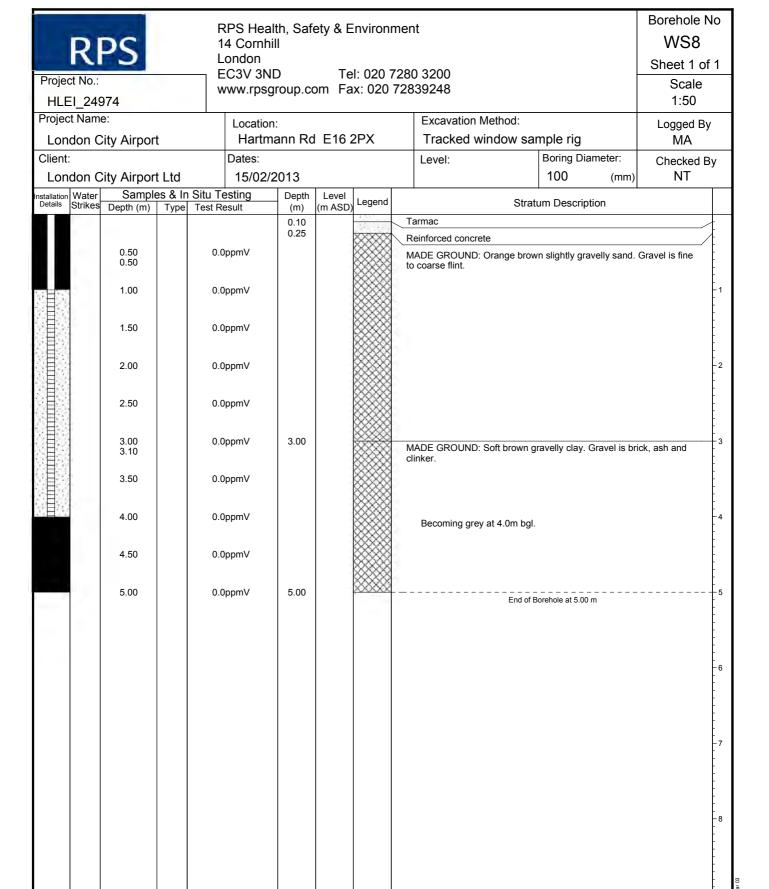
Type





Remarks:

Groundwater Groundwater not encountered during drilling. Remarks:



Excavation Remarks:

Groundwater Groundwater not encountered during drilling. Remarks:

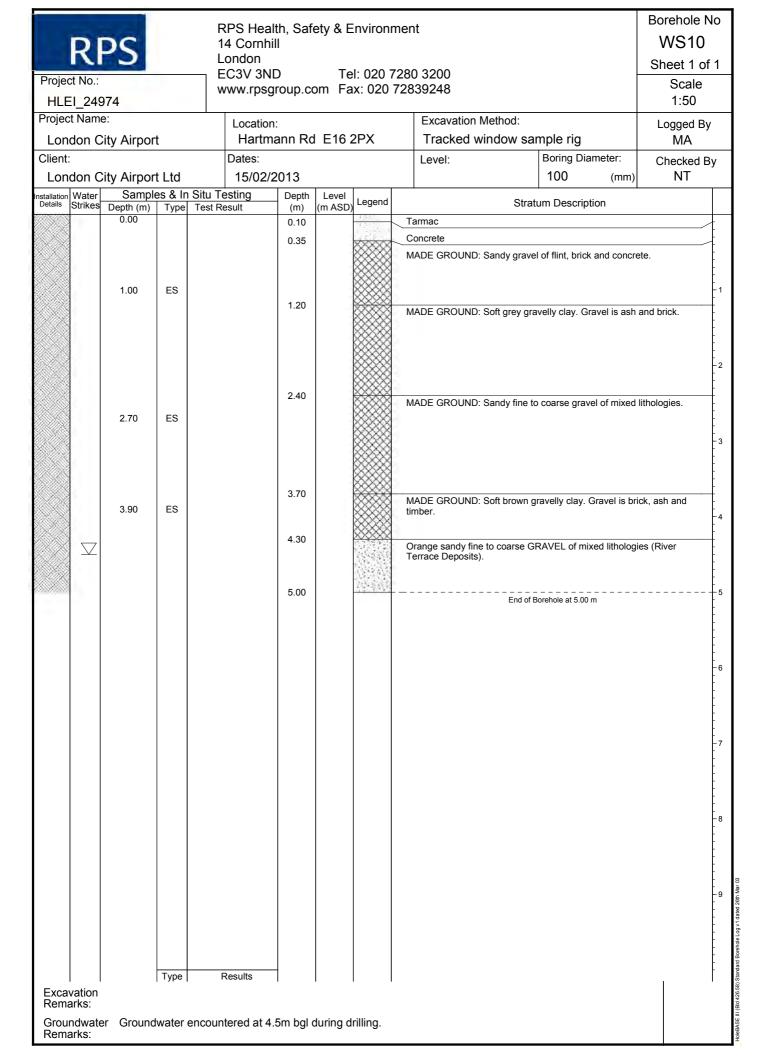
Results

Type

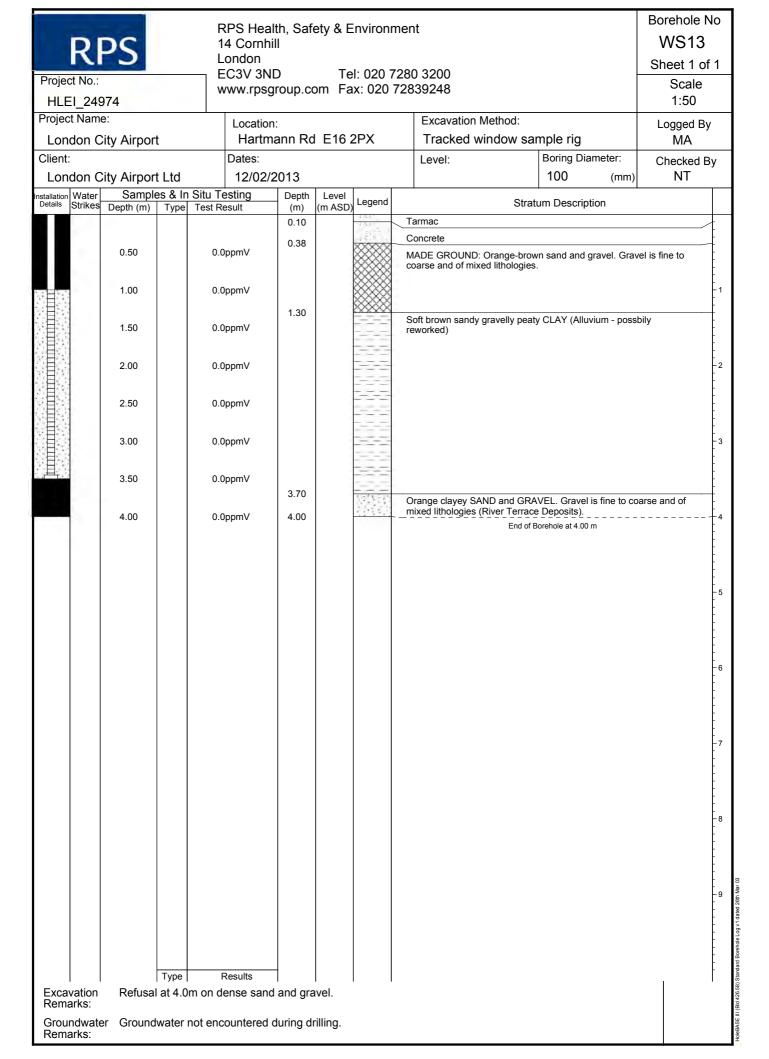
Borehole No RPS Health, Safety & Environment WS9 14 Cornhill London Sheet 1 of 1 EC3V 3ND Tel: 020 7280 3200 Project No.: Scale www.rpsgroup.com Fax: 020 72839248 1:50 HLEI 24974 Project Name: **Excavation Method:** Location: Logged By Tracked window sample rig Hartmann Rd E16 2PX London City Airport MA Boring Diameter: Client: Dates: Level: Checked By 13/02/2013 100 NT London City Airport Ltd Samples & In Situ Testing
Depth (m) Type Test Result nstallation Details Water Strikes Depth Level Legend Stratum Description (m) 0.05 (m ASD) Tarmac 0.38 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 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 \bigvee 3.50 0.0ppmV 4.00 End of Borehole at 4.00 m - 5 6 8 Results Excavation Refusal at 4.0m bgl on dense sand and gravel. Hole collapsed to 3.5m bgl. Remarks:

Groundwater encountered at 3.5m bgl.

Groundwater Remarks:



Project Project	t No.: I_249 Name			14 L∈ — E	4 Cornhilondon C3V 3NI www.rpsg Location	on V 3ND Tel: 020 7280 3200 .rpsgroup.com Fax: 020 72839248									
Client:			-		Dates:					Level:	Boring Diameter:	MA Checked By			
Lond	lon C	ity Airport	t Ltd		12/02/2013						100 (mm)				
nstallation Details	Water	Sample Depth (m)			Situ Te Test Re				Depth (m)	Level (m ASD)	Legend		Stra	tum Description	
		Depui (III)	Турс	163116	Suit	0.10	(III AOD)	7.47	Ta	armac	<u> </u>				
						0.25		XXXX	C	oncrete					
						0.50			М	ADE GROUND: Sandy gravestruction encountered at 0.5	el of mixed lithologies. Com depth. Borehole at 0.50 m	-2 -3 -4 -4 -7 -7 -7			
												-			
			Туре	R	Results	+						.			
Excav Rema	ation				5m on con	crete ob	structio	n.				, i			
Groun Rema	dwate	er Ground	water n	ot enc	ountered o	during dr	illing.								



Borehole No RPS Health, Safety & Environment **WS14** 14 Cornhill London Sheet 1 of 1 EC3V 3ND Tel: 020 7280 3200 Project No.: Scale www.rpsgroup.com Fax: 020 72839248 1:50 HLEI 24974 Project Name: **Excavation Method:** Location: Logged By Tracked window sample rig Hartmann Rd E16 2PX London City Airport MA Boring Diameter: Client: Dates: Level: Checked By 19/02/2013 100 NT London City Airport Ltd (mm) Samples & In Situ Testing
Depth (m) Type Test Result nstallation Details Water Strikes Depth Level Legend Stratum Description (m ASD) (m) Concrete 0.25 MADE GROUND: Orange brown gravelly sand. Gravel is fine to coarse and of mixed lithology. 0.50 2.0ppmV 1.00 1.00 0.0ppmV ES 1.50 0.0ppmV \bigvee 2.00 2 0.0ppmV 2.50 0.0ppmV 3.00 0.0ppmV 3 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 - 5 End of Borehole at 5.00 m

A.50 0.0ppmV 4.70 5.00 Soft brown peaty CLAY (Alluvium).

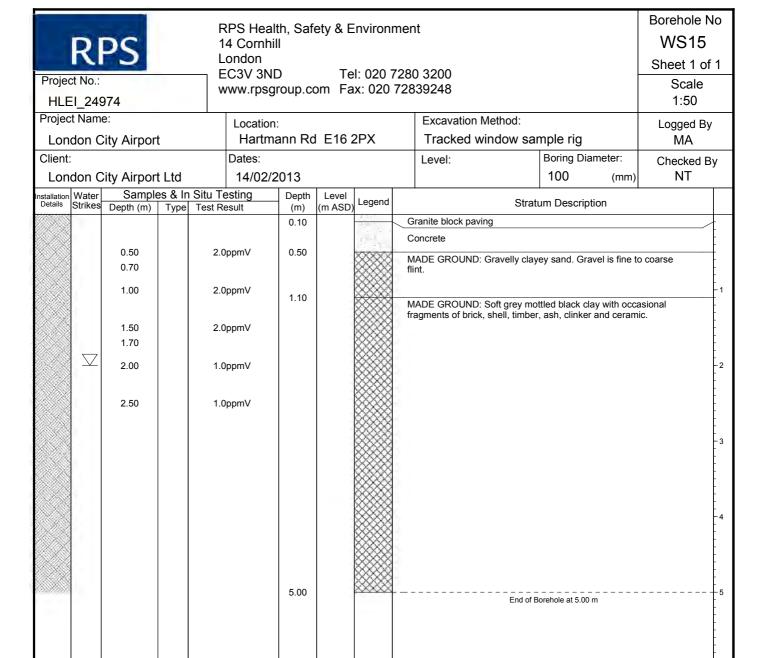
End of Borehole at 5.00 m

Type Results

Excavation Remarks:

Groundwater Groundwater encountered at 2.0m bgl during drilling.

Remarks:



6

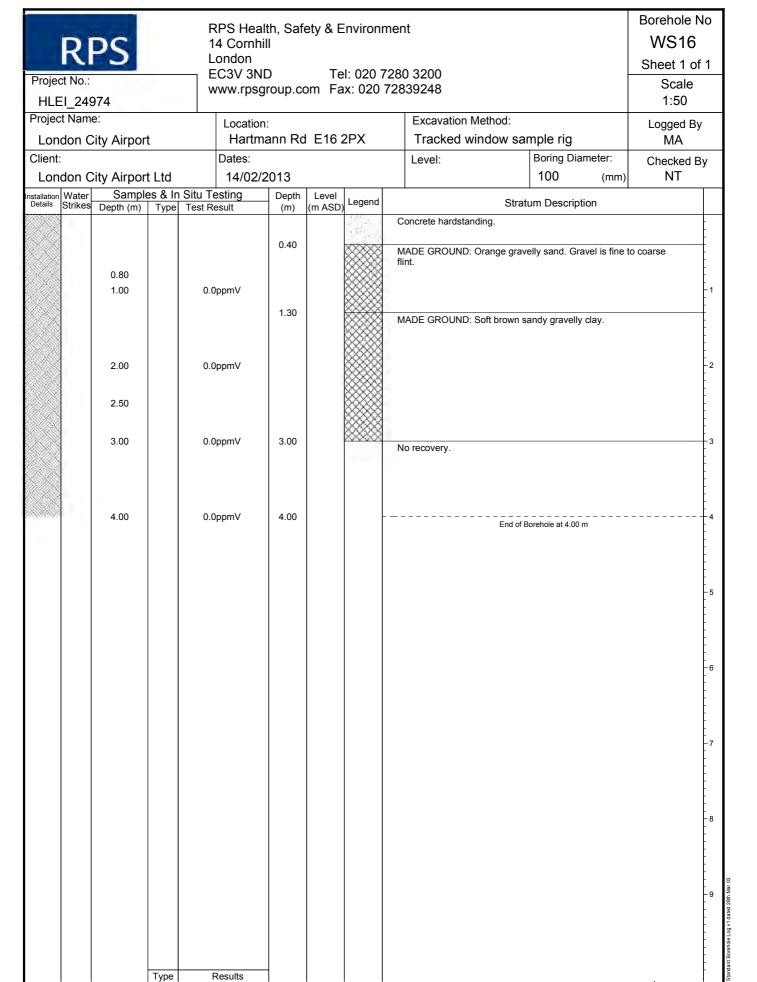
8

Excavation Remarks:

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

Results

Type



Excavation Remarks:

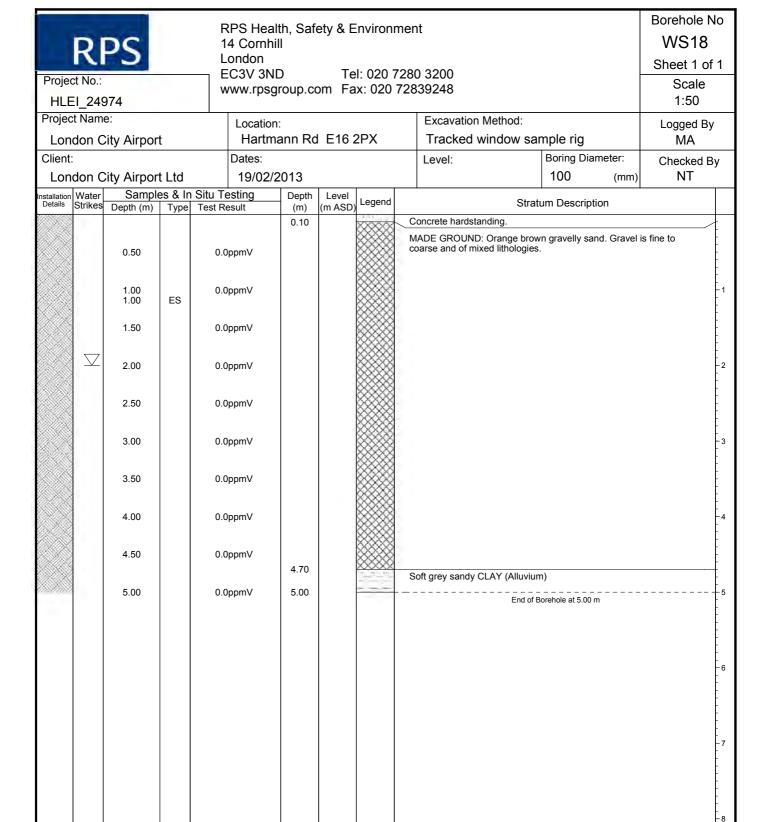
Refusal at 4.0m on dense gravels.

Groundwater

Groundwater not encountered during drilling.

Remarks:

Projec	t No.: I_249			14 Lo → E	PS Heal 4 Cornhil ondon C3V 3NI ww.rpsg))	Te	el: 020 7	'280	3200 39248		Borehole No WS17 Sheet 1 of Scale 1:50	
Projec					Location		E40	0DV		Excavation Method:		Logged By	
Client:		ity Airport			Hartma	ann Ro	E16.	ZPX		Tracked window sa	Boring Diameter:	MA	_
		ity Airport	t Ltd		13/02/2	2013				Level.	100 (mm)	Checked By NT	
nstallation	Water	Sample	es & In		sting	Depth	Level	Legend		Strat	tum Description		
Details	Strikes	Depth (m)	Туре	Test Re	sult	(m) 0.10	(m ASD	Legend	Gr	anite block paving.	turii Description		_
ш						0.10		148		ADE GROUND: Concrete sla	ab.		
		1.00 1.20	ES	0.0ք	opmV	0.52			M <i>A</i> bri	ADE GROUND: Soft grey / bck, chalk and flint.	lack gravelly clay. Grave	el is ceramic,	- 1 - 1
		2.00 2.10	wn gravelly sand. Gravel	is fine to	-2								
		3.00		0.0p	opmV								-3
	4.00 0.0ppmV												-4
						5.00				End of t	Borehole at 5.00 m		-5
													-7
													-8
													9 486 500
													, deco
			Туре	R	esults	1						,	- State
Exca\ Rema	/ation arks:												04 408 50
Grour Rema	ndwate arks:	er Ground	water e	ncount	ered at 2.	0m bgl o	during d	Irilling.					S III DOVONO



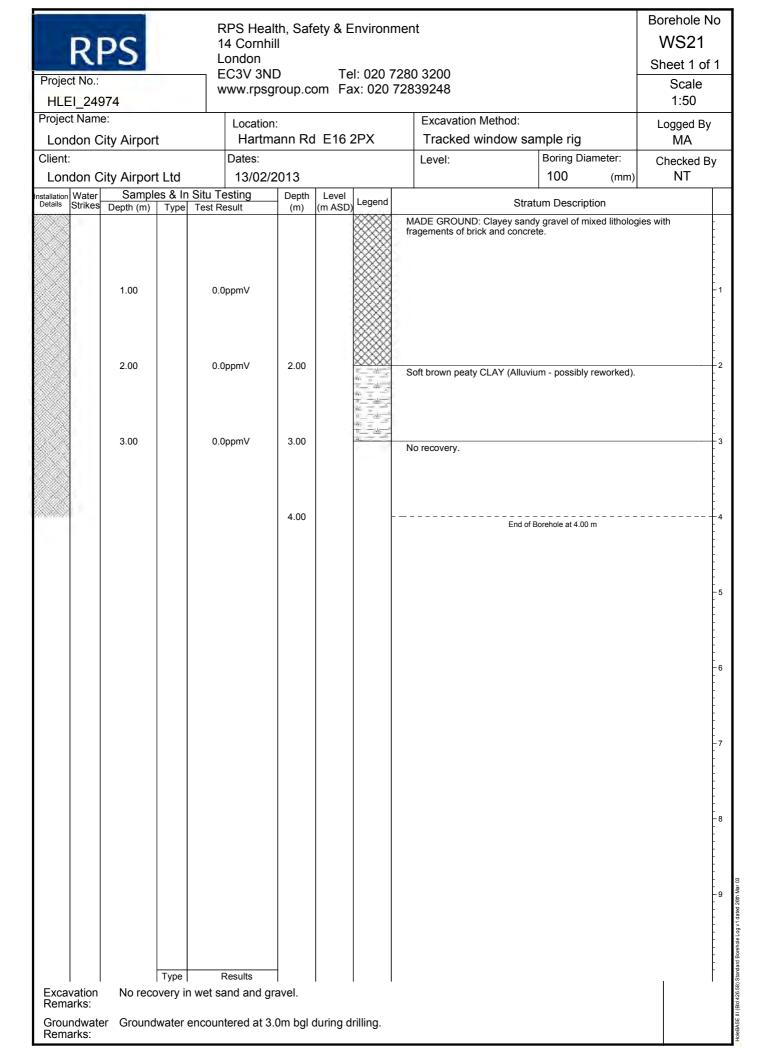
Excavation Remarks:

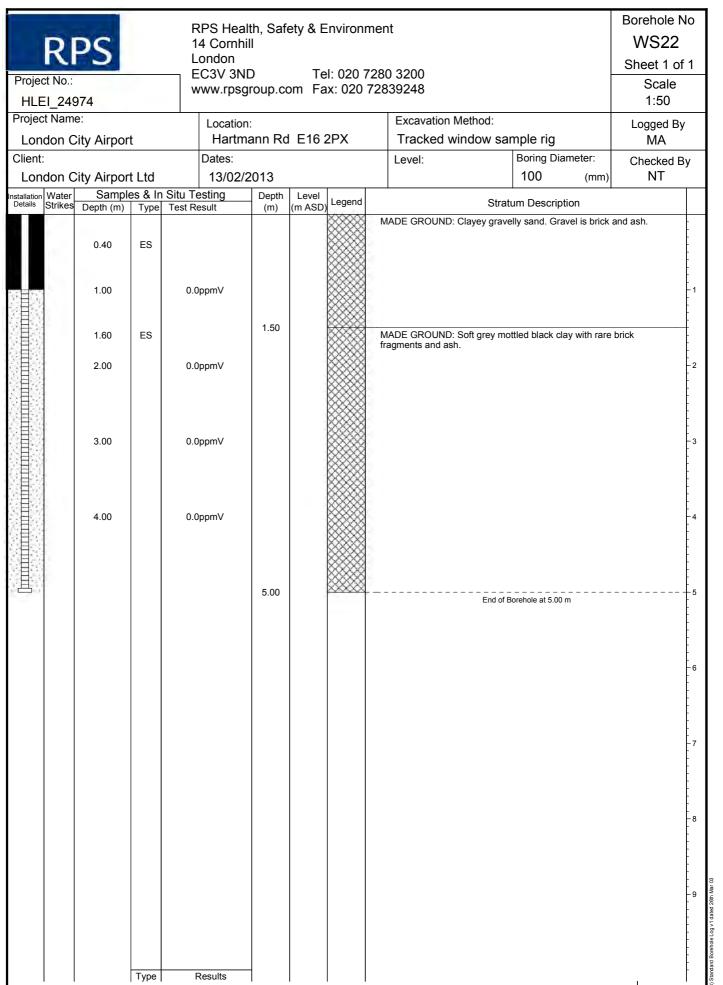
Groundwater Groundwater encountered at 2.0m bgl during drilling. Remarks:

Results

Туре

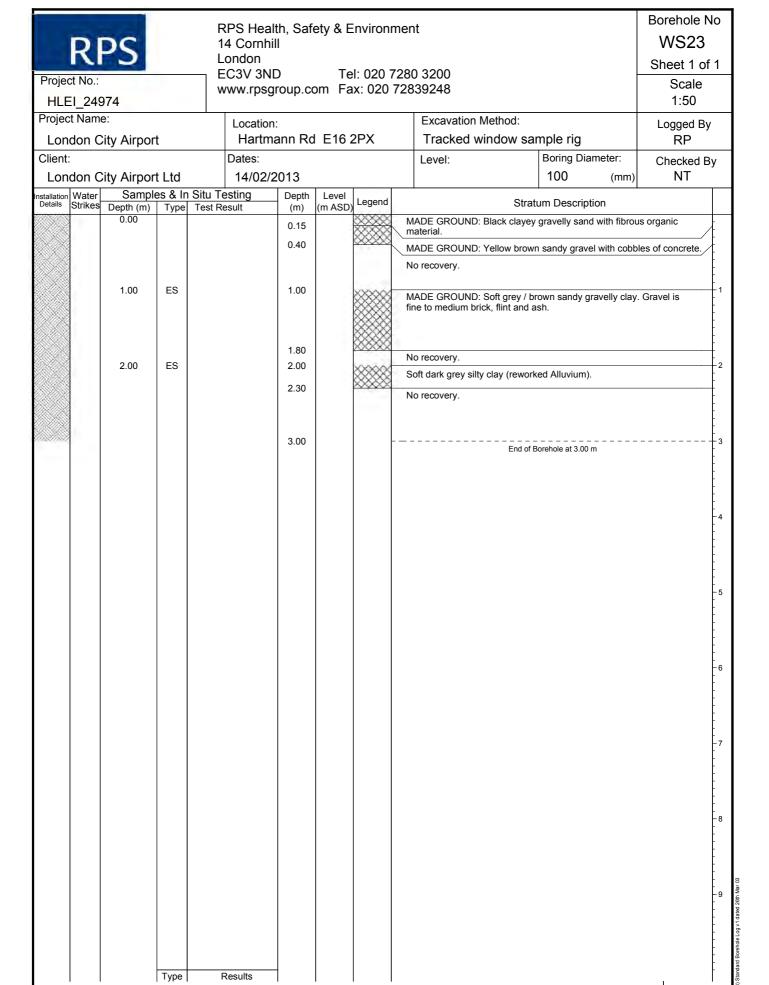
Borehole No RPS Health, Safety & Environment **WS19** 14 Cornhill London Sheet 1 of 1 Tel: 020 7280 3200 EC3V 3ND Project No.: Scale www.rpsgroup.com Fax: 020 72839248 1:50 HLEI 24974 Project Name: **Excavation Method:** Location: Logged By Tracked window sample rig Hartmann Rd E16 2PX London City Airport MA Boring Diameter: Client: Dates: Level: Checked By 100 NT London City Airport Ltd 19/02/2013 (mm) Samples & In Situ Testing
Depth (m) Type Test Result nstallation Details Water Strikes Depth Level Legend Stratum Description (m ASD) (m) 0.10 Concrete hardstanding. $\ensuremath{\mathsf{MADE}}$ GROUND: Orange brown gravelly sand. Gravel is fine to coarse and of mixed lithologies. 0.50 0.50 0.0ppmV 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 3.50 0.0ppmV 4.00 0.0ppmV 4.90 5.00 Grey black sandy CLAY (Alluvium) 5.00 0.0ppmV - 5 End of Borehole at 5.00 m 6 8 Type Results Excavation Remarks: Groundwater encountered at 1.0m bgl during drilling. Groundwater Remarks:





Excavation Remarks:

Groundwater Groundwater not encountered during drilling. Remarks:



Excavation Remarks:

Groundwater Groundwater not encountered during drilling. Remarks:

	S				B	OR	EΗ	OLE	E LO	G		E	hole No 3H1 et 1 of 3
roject Na	ame: L	ondon City Airport - Wester Ferminal Extension	Coordin	ates		Drill	ing Me	thod:	Dando	2000			e Type
roject No	o. l	HLEI32363	Northing	gs:		Star	t Date	22/1	0/2014	Casing Diameter (mm)	Casing Dept (m)	h	CP
ocation:	L	ondon City Airport	Easting	s:		End	Date:	23/1	0/2014			S	cale
lient:	L	ondon City Airport	Ground	Level: m AC	DD	·	Logge	By: RB		Pipe Diamete	er (mm): 50	7	1:50
	Water	Samples	& In Situ	Testing	Level	Thick ness	Depth	Legend		Description	on Of Strata	,	
Weii 6	Strikes	Depth (m)	Type	Results	(m AOD)	(m)	(m)	Legenu		·			
		0.10	PID	0ppm		(0.20) (0.15)	0.20			gravelly fine to ular to sub-rour			
		0.10 0.10-0.20	D B			(0.13)	0.35		flint ar	nd red brick, cor			· [
		0.35	D			(0.55)			fragme (MADI	ents. E GROUND)			#
		0.40 0.50	ES PID	17ppm			0.90		Concr	ete. CRETE)			<u> </u>
_::::		0.60 0.90	D ES			(0.70)			Brown	gravelly fine to	medium s	and with	
		0.90	D				1.60			ts of grey clay. ounded fine to m			d F
- 11 :		0.90-1.50 1.00	B PID	0ppm					brick,	concrete and pl			
7, 1:		1.50	SPT	N=10						E GROUND) n/grey sandy gra	avelly clay.	Gravel is	-
		1.50	PID	(2,1/2,2,3,3) 0ppm					angula	ar to sub-rounde	ed fine to m	edium of	
∃		1.50-1.95 1.60	D D	''		(2.20)				nd red and yello ic fragments. Y			
		2.00	PID	0ppm		(2.20)			1.60m	bgl. E GROUND)			-
		2.50	SPT	N=23 (2,1/3,6,8,6)					Dark b	prown sandy gra			
		2.50	PID	0ppm						ar to sub-rounde nd red and yello			Ė
		2.50-3.00 3.00	B ES				2.00			E GROUNĎ)	Ì		-
		3.00	PID	0ppm		(0.10)	3.80 3.90	× .slc.=slc.		gravelly fine to angular to rour			rel
		3.40 3.50	D PID	0ppm				* '''' * '''' * ''''	(MADI	E GROUND)			/[
*		3.50	SPT	N=3 (2,2/1,0,1,1)		(1.10)		× 3k2 - 3k3 × 3k2 - 3k3 Nb = 1 + 2		grey brown sligh IVIUM)	ntly peaty C	LAY.	-
		3.50-3.95	D	(2,2/1,0,1,1)				% '2 v' - 2 v' - x x - 2 v' - x x - 2 v' - x	(, ,	,			[
		3.90 4.00	D PID	0ppm			5.00	× 318 = 318	Grey r	nottled reddish	brown silty	CLAY.	
		4.00-4.50 4.50-4.95	B U					××		VIUM)			Ė
		4.50-4.95	ES			(1.30)		××					-
\$ \$		5.00 5.00	PID D	0ppm				××					- [
		5.50	SPT	N=4				×					
		5.50-5.95	D	(1,1/1,1,1,1)			6.30	عادد عادد خ مادد عادد عاد		prown slightly cl	ayey PEAT	-	
		6.00 6.30	PID	0ppm				े और और और और औ	(ALLU	IVIUM)			F
		6.50-6.95	D U					s ale ale ale ale ale					
		7.00 7.00	PID D	0ppm				ک عالم عالم عالم عالم عالم اد عالم عالم					Ė
		7.00-7.50	В	NI-O		(2.30)		5 3116 3116 3116 3116 3111 5 316 3186					-
		7.50	SPT	N=6 (0,1/1,1,2,2)				316, 316, 316 5, 316, 316					-
		7.50-7.95 8.00	D PID	1ppm				ज़बीर, ज़बिर, ज़बिर १ ज़बिर, ज़बिर, ज़बिर, ज़बिर, ज़बिर,					
		8.30	D					હ્યાલ આલ ઓ દ હોલ્ડ એલ્ડ એલ્ડ એલ્ડ ઓ					Ė
		8.50-8.95	U				8.60	ale ale	Green	ish grey slightly	, silty fine S	AND	
			-					× × ×		PPERTON GRA			-
		9.00 9.00	PID D	0ppm		(0.90)		× × ×					Ė
		9.00-9.50	В	NI-00			0.50	* * * ×					
		9.50	SPT	N=23 (4,4/5,4,6,8)			9.50			orown slightly sa ed fine to coars			Ŧ
		9.50 9.50-10.00	D B						Touride			or mit.	
emarks		9.50-10.00	ט		Chi	seling D	etails			Continued	on next sheet Groundwa	ter Notes	
	ed at targe	et depth of 20.00m bgl					D	epth	Depth	T		Casing	Level A
					Tir	ne Takei	n Fro	m (m)	To (m)	Tool Used	Strike (m) 9.50	Depth (m) 9.50	20 Mins

RP	S				В	OR	ΕH	OLE	E LO	G			hole No. 3H1 et 2 of 3
Project N	Name:	London City Airport - Westerr Terminal Extension	Coordin	ates		Dril	ing Me	ethod:	Dando	2000		Hol	е Туре
Project N	No.	HLEI32363	Northing	gs:		Sta	t Date	: 22/10	0/2014	Casing Diameter (mm)	Casing Dept (m)	h	CP
Location	ı: I	London City Airport	Easting	s:		End	Date:	23/10	0/2014			S	cale
Client:	l	London City Airport	Ground	Level: m AC	DD	'	Logge	d By: RB		Pipe Diamete	er (mm): 50	7 .	1:50
	Water	Samples	& In Situ	Testing	Level	Thick	Depth					-	
Well	Strikes	Depth (m)	Туре	Results	(m AOD)	ness (m)	(m)	Legend		Descriptio	n Of Strata	3	
		10.00	ES						(SHEP	PERTON GRA	VEL MEM	BER)	į.
		10.00	PID	0ppm									-
		10.50	D			(1.50)							Ē
		44.00	DID				44.00						ļ.,
/////////////////////////////////////		11.00 11.00	PID SPT	0ppm N=37			11.00			rown sandy and		unded fine	11
				(7,9/9,9,9,10		(0.80)				dium GRAVEL o PPERTON GRA		BER)	-
		11.00-11.50	В)					,			,	-
		12.00					11.80		Grey/b	rown very grave	elly fine to	medium	
		12.00	D PID	0ppm				V.V.E.V.		. Gravel is sub- medium of flint.		rounded	- 12 -
		12.50	SPT	N=34						PERTON GRA		BER)	Ė
		12.50	3P1	(3,3/5,7,10,1									-
		12.50-13.00	В	2)									: - 13
		13.00	PID	0ppm									13
		13.50	D										Ē
		10.00	Ь			(3.70)							ļ
		14.00	PID	0ppm									- - 14
		14.00	SPT	N=13									ļ '
		14.00-14.50	В	(2,3/4,3,2,4)									Ē
		14.00-14.50	Ь										-
		15.00	PID	0ppm									[- 15
		15.00	D	σρρ									-
		15.50	SPT	N=32			15.50		0 "				
				(3,4/6,9,9,8)		(0.30)	15.80			orown sandy and dium GRAVEL o		unaea tine	• [
		15.50-16.00 16.00	B PID	1ppm			13.00		\ (SHEP	PERTON GRA	VEL MEM		—-/- 1e
										orown very grave . Gravel is sub-			Ė
////		16.50	D					7. v250.	fine to	medium of flint.			ŀ
									(SHEP	PPERTON GRA	VEL IVIEIVII	DEK)	E
		17.00	SPT	N=13		(2.50)							- 17
		17.00	PID	(1,2/3,4,3,3) 0ppm									-
		17.00-17.50	В	Орріп									Ė
													-
		18.00	D										18
		18.00 18.30	PID D	0ppm		(0.10)	18.30		Grev/h	orown fine SANI) with rare	angular t	0
		18.50	SPT	50 (25 for			18.40	x	rounde	ed fine gravel of	flint.	•	`
				100mm/50 for 60mm)				x	(SHEP	PERTON GRA	VEL MEMI	BER)	 /├
		18.50-19.00	В	,		(4.05)		x		IET SAND FOR			- 19
		19.00 19.30	PID ES	0ppm		(1.60)		× × ×					Ē
$\Box \Box$		19.50	D					*					-
								× × ×					ţ
ser a Tea		20.00	PID	0ppm			20.00	X14.24 18.34		Continued of	n next sheet		20
Remarks		et depth of 20.00m bgl.			Chi	seling D					Groundwa		Ι
iole telliili	awu ai laigi	aepin oi 20.00111 bgi.			Tir	ne Take		epth om (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m
											9.50	9.50	5.70

RF	PS				В	OR	EΗ	OLE	E LO	G		E	nole No. B H1 et 3 of 3
Project I	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	ling Me	thod:	Dando 2	2000			e Type
Project I	-	HLEI32363	Northing				rt Date:		0/2014	Casing Diameter	Casing Dept		CP CP
Location		London City Airport	1				l Date:		0/2014	(mm)	(m)		cale
			1		ND	LIIC				Dina Diamete	(). FO	_	
Client:		London City Airport			טכ	T		By: RB	<u> </u>	Pipe Diamete	er (mm): 50	1	:50
Well	Water Strikes	Samples of Depth (m)		Results	Level (m AOD)	Thick ness	Depth (m)	Legend	I	Description	on Of Strata	a	
		20.00	Type SPT	50 (25 for		(m)				End of boreh	ole at 20.00 n	n	-
				80mm/50 for									<u> </u>
		20.00-20.45	D	70mm)									-
													[
													- 21 [
													[
													- 22
													<u> </u>
													- I
													- -23
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													- 29
													ţ
													ŧ
													[_]
					I	!: 7)				0	4a N ! - 4	-30
Remarks Hole termin		et depth of 20.00m bgl.			Chi	seling D		epth	Depth		Groundwa	ter Notes Casing	Level After
	9	,			Tin	ne Take	n Fro	m (m)	To (m)	Tool Used	Strike (m)	Depth (m)	20 Mins (m)
											9.50	9.50	5.70
										1			

RF	PS				В	OR	EΗ	OLE	E LO	G			hole No. 3H2 et 1 of 3
Project I	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Drill	ing Me	ethod:	Dando				е Туре
Project I	No. I	HLEI32363	Northing	gs:		Star	rt Date	24/10	0/2014	Casing Diameter (mm)	Casing Deptl (m)	h	CP
ocation	n: I	ondon City Airport	Eastings	S:		End	Date:	27/10	0/2014			_ s	Scale
Client:	l	ondon City Airport	Ground	Level: m AC	DD		Logge	By: RB		Pipe Diamete	er (mm): 50		1:50
Well	Water	Samples		Testing	Level (m AOD)	Thick ness	Depth (m)	Legend		Description	on Of Strata	1	
	Strikes	Depth (m)	Туре	Results	(III AOD)	(m)	(111)	XXXXXXXXXX	Dualis	·	no o divino o o	and Cuar	امر
		0.10 0.15 0.50 0.50 0.50-1.00 0.60 1.00 1.20 1.50 1.50 1.50-1.95 1.80 2.00 2.30 2.50 2.50 2.50 2.50 3.50 3.50 3.50 4.00 4.00 4.00 4.40 4.50-4.95 5.00 5.00 5.50-5.50 5.50-5.95 6.00 6.50	D ES PI D B ES PI D D PI D D PI D PI D B PI	Oppm Oppm N=12 (1,5/3,3,3,3) Oppm Oppm Oppm N=2 (1,1/0,1,0,1) Oppm N=0 (0,0/0,0,0,0) Oppm Oppm Oppm Oppm Oppm Oppm Oppm Oppm Oppm Oppm Oppm		(0.25) (0.25) (1.30) (0.10) (0.50) (1.00) (0.50)	0.25 0.50 1.80 1.90 2.40 4.40 4.90	SS 400; SH 400; SH 500; is angulation is	E GROUND) ete. CRETE) brown/black very I is angular to s m of flint and re E GROUND) sh brown grave E GROUND) sh brown angular m gravel of flint E GROUND) sh brown/black ar to rounded fir mac fragments E GROUND) grey/brown sand ed to rounded fir VIUM) brown slightly pe VIUM) brown CLAY. VIUM)	y ashey graub-rounded brick fraguly sand. Grant to rounded to the file of flick fraguly sand. Grant to rounded to medius.	avelly sand fine to gravel is not. The define to gravel is not. The define to grave fine to gravel is not. The define to grave fine to grav	of land and the second	
		7.00 7.00 7.00-7.50 7.50 7.50-7.95 8.00	PID D B SPT D PID	0ppm N=7 (1,2/1,1,2,3) 2ppm		(2.80)	0.50	a silic sili	Dark b (ALLU	orown PEAT. VIUM)			-7
		8.50-8.95 8.50-9.00 9.00 9.30 9.30 9.50	U B PID ES D SPT ES	2ppm N=11 (4,3/3,3,3,2)		(0.10) (0.10)	9.30 9.40 9.50	is alter aller alter alt	_(ALLU Grey/b	prown gravelly f I is angular to s	ine to medi ub-angular	um SANE	D
Remarks	 3			<u> </u>	Chi	l iseling D	u Details			Continued	Groundwat	ter Notes	
		et depth of 20.00m bgl.				me Take	D	epth m (m)	Depth To (m)	Tool Used	Strike (m) 9.50	Casing Depth (m) 9.50	Level Afte 20 Mins (r 5.70

RF	PS]				В	OR	ΕH	OLE	E LO	G		E	hole No. 3H2 et 2 of 3
Project	Name:	London City Airport - Western Terminal Extension	Coordin	nates		Dril	ling Me	ethod:	Dando	2000			е Туре
Project	No.	HLEI32363	Northin	gs:		Sta	rt Date	: 24/1	0/2014	Casing Diameter (mm)	Casing Dep	th	CP
Location	n:	London City Airport	Easting	s:		End	Date:	27/1	0/2014			S	cale
Client:		London City Airport	Ground	Level: mAC	DD	·	Logge	d By: RB		Pipe Diamete	er (mm): 50	1	1:50
Well	Water	Samples	& In Situ	Testing	Level	Thick ness	Depth	Lagand		Dogorintio	n Of Strat		
vveii	Strikes	Depth (m)	Туре	Results	(m AOD)	(m)	(m)	Legend		Descriptio	ii Oi Siiai	d	
		9.50-10.00 10.00	B PID	0ppm					Grey/b	PPERTON GRA prown sandy and dium GRAVEL o PPERTON GRA	gular to ro	unded fine	,
		11.00 11.00	PID SPT	0ppm N=18 (5,6/6,5,4,3)		(2.50)							- 11
		11.00-11.50	В										-
		12.00 12.00	D PID	0ppm			12.00		Gravel	prown gravelly fi	ub-angular	fine of flir	
		12.50	SPT	N=21 (4,3/5,5,6,5)					(SHEF	PERTON GRA	v ⊏L IVIEIVII	PEK)	ŀ
		12.50-13.00 13.00	B PID	0ppm									- - 13
		13.50	D										-
		14.00	SPT	50 (25 for 125mm/50 for 100mm)									- - 14 - -
		14.00 14.00-14.50	PID B	0ppm		(5.00)							
		15.00 15.00	D PID	0ppm									- 15 -
		15.50	SPT	N=31 (5,7/10,5,7,9									-
		15.50-16.00 16.00	B PID	0ppm									- 16
		16.50	D										-
		17.00 17.00	PID SPT	0ppm 50 (3,8/50 for 180mm)		(0.50)	17.00		to med	prown sandy and dium GRAVEL o PPERTON GRA	f flint.		17
		17.00-17.50	В	,		(0.60)	17.50		Grey/b	rown slightly gr . Gravel is angu	avelly fine	to mediur	
		18.00 18.10 18.20 18.50	PID D ES SPT	0ppm 50 (25 for			18.10	× × × × × × × × × × × × × × × × × × ×	(SHEF Dark g	PPERTON GRA rey silty fine SA IET SAND FOR	ND.	BER)	- 18
		18.50-19.00 19.00	B PID	145mm/50 for 50mm)		(1.90)		x					- 19
		19.50	D	266				* * * * * * * *					-
					101		20.00	×××		Continued of	on next sheet		20
Remarks Hole termin		et depth of 20.00m bgl.			Ch	iseling D		enth	Denth		Groundwa	1	Lovel Aft
will	as targe				Tir	ne Take		Pepth om (m)	Depth To (m)	Tool Used	Strike (m) 9.50	Casing Depth (m) 9.50	Level After 20 Mins (m 5.70

RF	PS				В	ЭR	ЕН	OLE	E LO	G		E	hole No. 3H2 et 3 of 3
Project I	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	ling Me	thod:	Dando 2	2000			e Type
Project I	-	HLEI32363	Northing				rt Date:		0/2014	Casing Diameter	Casing Dept		CP
Location		London City Airport	1				Date:		0/2014	(mm)	(m)		cale
Client:		London City Airport			חכ	=		By: RE		Pipe Diamete	er (mm): 50		1:50
Ollorit.						Thick		. by. 11b	<u> </u>	T Ipo Biamoto	, (11111). 00		1.00
Well	vvater Strikes				Level (m AOD)	ness	Depth (m)	Legend		Description	on Of Strata	3	
Well	Water Strikes	Depth (m) 20.00 20.00 20.00-20.45	Type SPT PID D	Results 50 (25 for 110mm/50 for 60mm) Oppm	Level (m AOD)	Thick ness (m)	Depth (m)	Legend		End of boreh			-21 -22 -23 -24 -25
													-27
													- 28 - - - - -
													- 29 - 29 30
Remarks					Chi	seling D	Details				Groundwa	ter Notes	
Hole termina	ated at targ	et depth of 20.00m bgl.			Tin	ne Take	n Fro	epth m (m)	Depth To (m)	Tool Used	Strike (m) 9.50	Casing Depth (m) 9.50	Level After 20 Mins (m) 5.70

RP	PS				В	OR	ΕH	OLE	E LO	G			hole No. BH3 et 1 of 3
Project N	Name:	ondon City Airport - Western Ferminal Extension	Coordin	ates		Dril	ling Me	thod:	Dando			Но	е Туре
Project N	No. I	HLEI32363	Northing	gs:		Sta	rt Date:	30/1	0/2014	Casing Diameter (mm)	Casing Dept (m)	h	СР
Location	n: I	ondon City Airport	Easting	s:		Enc	l Date:	03/1	1/2014			5	Scale
Client:	I	ondon City Airport	Ground	Level: m A0	DD	·	Logged	By: RB		Pipe Diamete	er (mm): 50		1:50
Well	Water	Samples	& In Situ	Testing	Level	Thick ness	Depth (m)	Legend		Descriptio	n Of Strata	1	
	Strikes	Depth (m)	Туре	Results	(III AOD)	(m)	` ′	S. J. A. S. J.		•			
		0.10 0.10-0.50	D B			(0.10) (0.10)	0.06 0.16 0.26		(CONC	ete block paving CRETE) crushed glass.	J. 		
		0.50	PID	237ppm		(0.84)	0.20		(MADE	GROUND)			/[E
		0.80	ES			(5.5.)				ravelly medium is sub-rounded			
		1.00 1.10	PID D	0ppm			1.10		mediur	m of flint.			-1
		1.50	PID	0ppm		(0.40)	1.50		Brown	GROUND) gravelly sand v			/E
		1.50	SPT	50 (3,10/50		(0.50)	1.50			grey clay becor from 0.70 to 0.9			d
		1.50-1.95	D	for 295mm)		(* * * * * * * * * * * * * * * * * * *	2.00		angula	r to rounded fin	e to mediu	m of flint	-2
		1.50-2.00	В			(0.30)	2.30		and wo	ood, ceramic, re ents.	ed brick and	d metal	le -
		2.00-2.40 2.50	B PID	3ppm		(0.20)	2.50		(MADE	E GROUND)			#
		2.50	SPT	50 (6,10/50		(0.30)	2.80			sh brown sandy	red brick a	and wood	
		2.50-2.80	D	for 145mm)		(0.20)	2.90 3.10		fragme (MADE	ents. E GROUND)			-3
		2.70 2.80-3.10	ES B				0.10		Brown	slightly clayey			el [
		3.00	PID	4ppm						ılar to sub-roun te and red brick			⊪
		3.10 3.10-3.50	D B			(1.20)			(MADE	GROUND)			
		3.40 3.50	ES SPT	EO (1.9/EO					(CONC	CRETE)			4
		3.50	371	50 (1,8/50 for 235mm)			4.30			gravelly sand. unded fine to m			ınd F
		3.50 3.50-3.95	PID D	4ppm		(0.80)			wood f	ragments.			-
		4.00	PID	2ppm		(0.00)			Brown	GROUND) clayey gravelly	fine to me	dium san	d5
		4.30 4.50	D SPT	N=30			5.10		Gravel	is angular to ro	ounded fine	to medi	ım 📙
				(3,4/9,7,9,5)					fragme	and concrete a ents.	na rea bric	ĸ	I
		4.50-5.00 5.00	B PID	1ppm		(1.30)			(MADE	GROUND)			
		5.10 5.20	D D						(CONC	CRETE)			6
$\exists : \exists : \exists :$		5.50-5.95	U							clayey gravelly is angular to re			
$: \exists : :$		6.00 6.00	PID D	0ppm		(0.30)	6.40	× <u>shia</u> ×	of flint	and concrete a			II E
		6.40	D	N. O			6.70	1016 3016 30 1016 3016 30 1016 3016		GROUND)			
		6.50	SPT	N=2 (0,0/0,0,1,1)		(0.60)		<u>. 1816: 1816: 181</u> 16: 1816: 1816:	Brown to sub-	sandy gravelly angular fine to	clay. Grave	el is angu	ılar -7
		6.50-6.95 6.50-7.00	D B				7.30	salis alis al salis salis alis alis al	red bri	ck fragments. L			ll-
		7.00	PID	0ppm				sina anna ai la silha silha silha silha sil	alluviui (MADE	m. E GROUND)			
$\mathbb{H}_{\mathbb{H}}$		7.30 7.50-7.95	D U					ه عالم عالم عالم عالم	Grey/b	rown clay with			IIII:
H: 13		8.00	PID	0ppm				ياند عائد يا عاند عائد عاد	fragme	igular fine red a ents.	ina yellow i	DIICK	-8
		8.00 8.00-8.50	D B			(2.00)		k silk silk silk silk sil		GROUND) rown mottled re	addish brow	vn sandv	
\mathbf{B}		8.50	SPT	N=4				ls sills sills <u>sills sills sil</u> ls sills sills	CLAY	with occasional			
		8.50-8.95	D	(1,1/1,1,1,1)				3016: 3016: 301 12: 3016: 3016:	peat. (ALLU)	VIUM)			 -9
		9.00 9.20	PID ES	0ppm			9.30	راد خاند خاند اد عادد خاند	Grey s	lightly silty sligh	ntly peaty C	LAY.	
		9.30	D				9.50	reserve	(ALLU) Dark b	rown/grey claye	ey PEAT w	ith shell	─ ─ }
									fragme (ALLU)	ents.			-
								14-17	LALLO		on next sheet		10
Remarks	}				Chi	iseling [Details	·		John Ned C	Groundwa	ter Notes	
Hole termina	ated at targe	et depth of 25.00m bgl.			Tir	ne Take		epth m (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	Level After 20 Mins (m)
					'''	rane	110	(.!!)	10 (111)	1501 0360	9.30	5.50	6.60

RF	PS]				В	OR	ЕН	OLE	E LO	G		E	hole No 3H3 et 2 of 3
Project I	Name:	London City Airport - Wester Terminal Extension	Coordin	ates		Drill	ing Me	thod:	Dando	2000			e Type
Project N	No.	HLEI32363	Northing	gs:		Star	t Date	30/10	0/2014	Casing Diameter (mm)	Casing Dept	th	CP
ocation	า:	London City Airport	Easting	s:		End	Date:	03/1	1/2014	(11111)	(111)	S	cale
Client:		London City Airport	Ground	Level: m AC	DD D	I	Logge	By: RB		Pipe Diamete	er (mm): 50	7 ,	1:50
	Water		-			Thick	Depth						
Well	Strikes		Туре	Results	Level (m AOD)	ness (m)	(m)	Legend		Description	on Of Strata	3	
		10.00	SPT	N=14		. ,				rown slightly cl	ayey PEAT		- -
		10.00	PID	(3,3/4,4,3,3) 0ppm						VIUM) grey/brown angu	ılar to roun	ided fine t	
		10.00-10.50	В	σρρ					mediu	m GRAVEL of f	lint.		
		11.00	D						(SHEF	PPERTON GRA	VEL MEMI	BER)	-
		11.00 11.00	D PID	0ppm									-
		11.50	SPT	N=24									Ė
				(3,8/8,6,5,5)		(3.90)							-
		11.50-12.00 12.00	B PID	0ppm									Ę
		12.00	5	ОРР									ŧ
8		12.50	D										-
8													ļ
S S		13.00	SPT	N=4									-
		13.00	PID	(2,1/1,1,1,1) 0ppm			13.20	x × x	Grey/b	prown silty fine s	SAND with	a band of	f
		13.00-13.20	В	ОРР		(0.60)		$\mathcal{K}_{\mathcal{K}}^{\mathcal{K}}$	peat. (SHFF	PPERTON GRA	VEL MEMI	SER)	F
		13.20 13.40	D ES				13.80	× ×	•	prown gravelly f		,	-
		13.50-13.80	В			(0.40)			Grave	l is sub-angular			´. -
		13.80 14.00	D PID	0ppm		(0.30)	14.20			m of flint. PPERTON GRA	VEL MEMI	BER)	Æ
		14.50	SPT	N=8			14.50		Grey/b	orown sandy su	b-rounded		d /
		14.50-15.00	В	(3,2/2,2,2,2)					1	medium GRAV PPERTON GRA		BER)	/-
8 8		15.00	PID	0ppm		(4.50)			Grey/b	rown gravelly f	ine to med	ium SAND	D.
		15.50	D			(1.50)				l is sub-angular m of flint.	to rounded	ine to	-
		15.50	D						(SHEF	PPERTON GRA	VEL MEM	BER)	-
		16.00	PID	0ppm			16.00						
		16.00	SPT	N=8			10.00			orown slightly gr . Gravel is angu			n -
		16.00-16.50	В	(3,2/2,2,2,2)		(1.00)			flint.	· ·			-
									(SHEF	PPERTON GRA	VEL MEMI	BER)	Ī
%		17.00	PID	0ppm			17.00		Grev/h	prown fine to me	edium SAN	D with rai	e
		17.00	В						angula	ar to rounded fir			
		17.50	SPT	50 (25 for						to 17.50m bgl. PPERTON GRA	VEL MEM	BER)	ļ
				7mm/50 for 20mm)								,	ŧ
: : ::		17.50-17.95 17.50-18.00	D B	,									-
		18.00	PID	0ppm									ŀ
		18.50	D			(4.50)							Ē
		19.00	PID	Onne									-
· H:		19.00	SPT	0ppm 47 (25 for									F
:H:				75mm/47 for 105mm)									Ē
		19.00-19.45	D	10311111)									ŧ
		19.00-19.50 20.00	B D							2			
emarks	L S	_0.00			Chi	iseling D	etails			Continued	Groundwa		
		get depth of 25.00m bgl					D	epth	Depth	T111	Challes ()	Casing	Level A
					Tir	ne laker	n Fro	m (m)	10 (m)	100I Used	9.30	Depth (m) 5.50	20 Mins 6.60
					Tir	me Taker		m (m)	To (m)	Tool Used	Strike (m) 9.30	Depth (m)	

RP	S				В	OR	EΗ	OLE	E LO	G		E	hole No. 3H3 et 3 of 3
Project N	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	ling Me	thod:	Dando	2000			e Type
Project N		HLEI32363	Northing			-	rt Date:		0/2014	Casing Diameter	Casing Dept		CP CP
Location		London City Airport	-				l Date:		1/2014	(mm)	(m)		cale
			_		\D	EIIC				Dia - Diam-t	()- 50	_	
Client:		London City Airport			טט	T 1 · 1	Logged	By: RB		Pipe Diamete	er (mm): 50		1:50
Well	Water	Samples 8			Level (m AOD)	Thick ness	Depth (m)	Legend		Description	on Of Strata	1	
:::°:⊞.::	Ounco	Deptil (III)				(m)	(***)	E'44(F)(141)					
Well	Strikes	Depth (m) 20.00 20.50 20.50-20.95 20.50-21.00 21.00 21.50 22.00 22.00 22.00 23.00 23.00 23.00 23.50 23.50-24.00 24.00 25.00 25.00 25.00-25.45	Type PID SPT DBPDD PIDSPT DBSDDPDT SPT DBSDDPDT SPT DBSDD SPT DBSD S	Results Oppm 50 (25 for 145mm/50 for 90mm) Oppm Oppm 50 (25 for 120mm/50 for 85mm) Oppm Oppm 50 (25 for 115mm/50 for 80mm) Oppm Op	(m AOD)	ness (m) (4.00)	21.50 25.50	Legend	Grev/b	rown silty fine S	SAND.		-21 -22 -23 -24 -25 -26 -27
Domouko					Chi	coling F	Octaile				Groundwa	tor Notos	-30
Remarks Hole termina		et depth of 25.00m bgl.			Cni	seling [epth	Depth		Giouriawa	Casing	Lovel Affer
					Tin	ne Take		m (m)	To (m)	Tool Used	Strike (m) 9.30	Depth (m) 5.50	Level After 20 Mins (m) 6.60

RF	PS]				В	OR	ΕH	OLE	ELO	G		E	hole No. 3H4 et 1 of 3
Project I	Name:	London City Airport - Wester Terminal Extension	Coordir	nates		Dril	ling Me	ethod:	Dando			Hol	е Туре
Project N	No.	HLEI32363	Northin	gs:		Sta	rt Date	28/1	0/2014	Casing Diameter (mm)	Casing Dept (m)	h	CP
Location	1:	London City Airport	Easting	s:		End	l Date:	29/1	0/2014			S	cale
Client:		London City Airport	Ground	Level: m A0	DD	·	Logge	d By: RB		Pipe Diamete	er (mm): 50	7	1:50
Well	Water Strikes	Samples		1	Level (m AOD)	Thick ness	Depth (m)	Legend	'	Descriptio	n Of Strata	1	
	Cumoo	Depth (m)	Туре	Results		(m) (0.12)	0.06	XXXXXXXXX	Concre	ete block paving	יי		
		0.20	D			(0.12)	0.18	******	(CONC	RETE)			/ -
		0.45 0.50	ES PID	2ppm		(0.10)	0.26 0.50			crushed glass. GROUND)			/ F
		0.85	D	Σρριιι		(0.25)	0.60 0.85		Concre				
		1.00	PID	1ppm					Reddis	CRETE) h brown gravel	ly sand. G	ravel is su	ıb- 1
		1.00-1.50 1.30	B ES			(1.15)			rounde	ed to rounded fin te fragments.			l l
		1.50	SPT	N=4		(1.13)			(MADE	GRŎUND)			-
		1.50	PID	(1,1/1,1,1,1) 1ppm						brown sandy and the brown sandy and the brown sandy are to mediu			
		1.50-19.50	D				2.00			re red brick and			
: H. (:		2.00 2.00-2.50	D B							GROUND) very gravelly fire	no to modi	ım sand	
		2.10 2.50	ES SPT	N=6					Gravel	is angular to su	ub-angular	fine to	l
		2.50	3P1	(1,1/1,2,1,2)		(1.50)			coarse fragme	of flint and red	brick and	concrete	-
		2.50	PID	0ppm					(MĂDE	GROUND)			3
		2.50-2.95 3.00	D PID	0ppm						rown/black ash y sand. Gravel			
		3.40	D			(0.20)	3.50		rounde	d fine of flint ar	nd red brick	c and cha	ık
		3.50	SPT	N=3 (1,0/1,1,1,0)			3.70		fragme				# .
		3.50	ES						Brown	GROUND) mottled reddish			-4
$: \exists ! \: ! :$		3.50 3.50-3.95	PID D	0ppm		(1.50)				y clay becoming avel is angular			of
		4.00	PID	0ppm		(1.50)				red brick, and c) <u> </u>
$:$ $\exists 1$		4.50	SPT	N=9 (5,3/3,2,1,3)						m 3.00m bgl.			╟_
		4.50	PID	0ppm			5.20			GROUND) organic clay wit	h occasion	al coal ar	
		4.50-4.95 5.00	D PID	0ppm			3.20		glass fi	ragments.			-
		5.20	D							GROUND) mottled reddish	n brown gr	avelly cla	<u>v.</u>
		5.50-5.95 5.50-6.00	U B						Gravel	is angular to su	ub-angular	fine of flir	nt
		6.00	SPT	N=3		(0.40)				ass, red brick, a EGROUND)	ind chalk fr	agments.	-6
		6.00	PID	(1,0/1,0,1,1) 0ppm		(2.10)				rown CLAY bed	coming sar	dy at 6.00	Om :
		6.00-6.45	D	σρρ					bgl. (ALLU)	VIUM)			Ē
		6.20 6.50-6.95	ES U							- /			<u> </u>
		7.00	D										-7
		7.00 7.30	PID D	0ppm			7.30	a sina sina sina sina sin		reddish brown	PEAT.		
		7.50	SPT	N=6				la shlik shlik shlik shlik shli	(ALLU)	VIUM)			Ė
		7.50-7.95	D	(1,1/2,1,1,2)				اد عالد عالد عالد عالد عالد					
		7.50-8.00	В					5: :31k, :31k; :31k, :31k, :31k					-8
		8.00	PID	0ppm		(2.30)		la allia allia allia allia alli					-
		8.50-8.95	U			(2.50)		اد بخانه بخاند بخاند خاند بخان					Ē
			_					a silta silta silta silta silt					<u> </u>
: :: - :		9.00 9.00	D PID	0ppm				a siliz islia Aliz siliz sili					-9 [
$:= \exists :$								sille sille si sille sille sille sille sille si					}
\Box		9.50	SPT	N=11 (1,2/3,2,3,3)			9.60	s ans and	Dark d	rey/brown sand	lv angular i	o rounde	d
$: \mathbb{H}$		9.50	ES	, = = ,=,0,0)						coarse GRAVE			ļ
		9.50-9.95	D		12:			g-13/1-7		Continued of	on next sheet	t N' 1	10
Remarks Hole termina		et depth of 25.00m bgl			Chi	iseling [enth	Donth		Groundwa		Laurica
					Tir	ne Take		epth m (m)	Depth To (m)	Tool Used	Strike (m)	Casing Depth (m)	
											9.60	5.00	6.40

RP	S				BC	DR	EΗ	OLE	E LO	G		E	nole No. 3H4 et 2 of 3
Project N	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	ling Me	thod:	Dando	2000			е Туре
Project N	No.	HLEI32363	Northing	js:		Sta	rt Date:	28/1	0/2014	Casing Diameter (mm)	Casing Dept	h	СР
Location	:	London City Airport	Eastings	3:		End	d Date:	29/1	0/2014	()	()	S	cale
Client:		London City Airport	Ground	Level: m AC)D		Logged	By: RB		Pipe Diamete	er (mm): 50	7	1:50
	Water	Samples 8	In Situ	Testing	Level	Thick	Depth			5	01011	-	
Well	Strikes	Depth (m)	Туре	Results	(m AOD)	ness (m)	(m)	Legend		Description	n Of Strata	1	
		9.60 10.00 10.00-10.50	D PID B	0ppm					(SHEP	PERTON GRA	VEL MEME	BER)	
		11.00 11.00	PID SPT	0ppm 50 (4,6/50 for 255mm)									- 11 -
		11.00-11.50	В			(3.40)							-
		12.00 12.00	PID D	0ppm									- 12 -
		12.50	SPT	N=32 (2,3/4,6,9,13									-
		12.50-13.00 12.70 13.00 13.50	B ES PID D	0ppm		(0.80)	13.00			rown fine to co PERTON GRA			13
		14.00 14.00	PID SPT	0ppm N=15		(0.90)	13.80		Gravel	rown gravelly f is angular to s n of flint.			- 14
		14.00-14.50	В	(2,2/3,4,3,5)		(0.00)	14.70		(SHEP	PERTON GRA		-	
		15.00 15.00	PID D	0ppm					fine to	rown sandy su medium GRAV PERTON GRA	EL of flint.		15
		15.50	SPT	50 (9,11/50 for 95mm)									-
		15.50-16.00 16.00	B PID	Оррт		(2.30)							- 16
		16.50	D										-
		17.00	SPT	N=34 (4,5/6,8,9,11)		(4.00)	17.00			rown fine to co PERTON GRA			17
		17.00 17.00-17.50 18.00	PID B D	0ppm		(1.00)	18.00						18
		18.00	PID SPT	0ppm 50 (25 for		(0.60)	10.00		fine to	rown sandy su medium GRAV PERTON GRA	EL of flint.		1 10
				95mm/50 for 100mm)		(0.40)	18.60		Grey/b (SHEP	rown fine SAN	D. VEL MEME	BER)	
		18.50-19.00 19.00 19.00 19.10	B PID D ES	0ppm		(1.50)	19.00			rown fine to me PPERTON GRA			19
		20.00	PID	0ppm						Continued	on next sheet		20
Remarks				1	Chis	eling [) Details	I	<u> </u>	Continued	Groundwa		
Hole termina	ated at targ	et depth of 25.00m bgl.			Time	e Take		epth m (m)	Depth To (m)	Tool Used	Strike (m) 9.60	Casing Depth (m) 5.00	Level After 20 Mins (m) 6.40

RF	PS				В	BOREHOLE LOG						E	hole No. 3H4
Project	Name [.]	London City Airport - Western	Coordin	ates		Dri	lling Me	thod:	Dando	2000			et 3 of 3 e Type
Project		Terminal Extension HLEI32363	Northing				rt Date:		0/2014	Casing Diameter	Casing Dept		CP CP
Location		London City Airport	1				d Date:		0/2014	(mm)	(m)	_	cale
			_)D	LIII	1			Pina Diametr	or (mm): 50		
Cilent.					טל	Thick		л Бу. КБ		- гре Біатіец	er (mm). 50		1.50
Well		<u> </u>		_	Level (m AOD)	ness	Depth	Legend		Description	n Of Strata	ı	
Client: Well	Water Strikes	Samples & Depth (m) 20.00 20.00-20.45 20.50 21.00 21.50 21.50-22.00 22.30 23.00 23.00-23.50 24.00 24.50 24.50-25.00 25.00 25.00			Level	(1.80)	Depth (m) 20.50	By: RB	Grey/b SAND. mediur (SHEP	rown slightly gr Gravel is angu n of flint. PERTON GRA	ravelly fine ular to round	to mediur ded fine to BER)	1:50 m 0 -21 -22 -23 -24 -24 -27 -28 -29
Remarks Hole termin		et depth of 25.00m bgl.				seling l	D	epth m (m)	Depth To (m)	Tool Used	Groundwa Strike (m) 9.60	Casing	Level After 20 Mins (m) 6.40

RP	BOREHOLE LOG									E	hole No. 3H5 et 1 of 3		
Project N	Jame	London City Airport - Western	Coordin	ates		Dril	ling Me	ethod.	Dando	2000			e Type
Project N		Terminal Extension HLEI32363	Northing			-	rt Date		1/2014	Casing Diameter (mm)	Casing Dept	-	CP CP
Location		London City Airport	Eastings	s:		Enc	l Date:	06/1	1/2014	(11111)	(111)	S	cale
Client:		London City Airport	"		DD		Logge	d By: RE	3	Pipe Diamete	er (mm): 50	٫ ا	1:50
	Water	Samples 8	∟ & In Situ	Testing	Level	Thick	Depth						
Well	Strikes	Depth (m)	Туре	Results	(m AOD)	ness (m)	(m)	Legend		Descriptio	n Of Strata	a	
Well		Depth (m) 0.20 0.20-0.50 0.50 0.60 1.00 1.00 1.50 1.50-1.95 1.50-2.00 2.20 2.30 2.50 2.50-2.95 2.50-3.00 3.00 3.20 3.50 3.50 3.50 3.50-4.00 4.00 4.10 4.50 4.50 4.50-4.80 4.50-4.95 4.80 5.00 5.00-5.50 5.50-5.95 6.00 6.00 6.50 6.50-6.95 7.00 7.20 7.50-7.95 8.00 8.00-8.50 8.50-8.90 8.50-8.90 8.50-8.95 8.80 8.90	Type D B P D S D B D S S P D D B P D P S D B P D P S D B P D B P D S S P B D D P B D D P S D D P B S B D S D B D S D B S B D S D S	Results Oppm Oppm Oppm N=7 (2,3/2,2,2,1) N=10 (2,1/2,3,2,3) 1ppm Oppm Oppm N=7 (2,1/2,2,2,1) Oppm N=9 (4,1/2,2,2,3) Oppm Oppm Oppm Oppm N=5 (1,2/1,1,2,1) Oppm Oppm Oppm Oppm N=10 (1,2/2,2,3,3)				Legence A SAME A SAM	Brick p (CONC Light y mediur angula (MADE Brown (MADE Reddis sand. (of flint (MADE Light b Gravel of flint (MADE Dark g CLAY. (ALLU' Organic o	eaving. CRETE) ellowish brown m sand. Gravel r fine of flint. EGROUND) slightly gravelly is angular to st EGROUND) clayey gravelly EGROUND) sh brown gravel Gravel is angular to ro EGROUND) rown gravelly fi is angular to ro EGROUND) dark brown clay is angular to ro with rare wire fr EGROUND) rey/brown mottl VIUM) dour recorded.	slightly grais angular if fine to me ub-angular fine to me ly fine to mar to sub-an ne to medinal fine ey gravelly bunded fine ragment. led reddish AT.	dium sandine of flint and a control of flint. ASH. a to medium of flint and a control of flint.	d1 at2 d3 -5 -6 -6 -7 -8
		9.00 9.50	PID ES	0ppm									<u> </u>
7//21 /2332					1	<u> </u>			é	Continued of	n next sheet		10
Remarks Hole termina		et depth of 25.00m hal			Chi	seling [lonth	Donth		Groundwa		1 1 4
Hole terminated at target depth of 25.00m bgl.					Tin	ne Take		epth om (m)	Depth To (m)	Tool Used	Strike (m) 8.90	Casing Depth (m) 8.90	Level After 20 Mins (m) 6.00

RP	S			BO	BOREHOLE LOG						E	Borehole No. BH5 Sheet 2 of 3	
Project N	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	lling Me	thod:	Dando	2000			e Type
Project N		HLEI32363	Northing	as:			rt Date:		1/2014	Casing Diameter (mm)	Casing Dept	-	CP
Location		London City Airport	1			End	d Date:		1/2014	(111111)	(m)		cale
Client:		London City Airport	-)D		Logged	d By: RB		Pipe Diamete	er (mm): 50	⊣ 1	:50
	Water	Samples 8				Thick					, , , ,		
Well	Strikes		Туре	Results	Level (m AOD)	ness (m)	Depth (m)	Legend		Description	on Of Strata	a	
		9.50	SPT	N=9		. ,							-
		9.50-10.00 10.00 10.50 11.00 11.00-11.50 12.00 12.00 12.50 12.50 13.50 14.00 14.00 14.00	B PID D SPT PID B SPT PID B	(2,2/2,2,3,2) Oppm N=22 (3,4/5,7,5,5) Oppm Oppm N=36 (4,6/7,9,10,1 O) Oppm 50 (5,7/50 for 210mm) Oppm		(4.10) (0.50)	13.00		Gravel of flint. (SHEP Grey/b GRAVI	rown gravelly f is angular to ro PERTON GRA rown sandy an EL of flint. PERTON GRA	ounded fine VEL MEME gular to rou	e to mediu BER) unded	
		15.00 15.00 15.50 15.50-16.00 16.00 16.50 17.00 17.00 17.00	PID D SPT D SPT PID B	0ppm 50 (25 for 135mm/50 for 285mm) 0ppm 50 (4,6/50 for 205mm) 0ppm		(1.80)	16.00		SAND.	rown slightly gr PERTON GRA	•		- 15 n - 16
		17.80 18.00 18.50 18.50-18.95 18.50-19.00 19.00 19.50	D PID SPT D B PID D	0ppm 50 (25 for 105mm/50 for 75mm) 0ppm		(3.70)	17.80		fine gra 17.80 t	rey/brown fine avel of flint and o 20.50m bgl. PERTON GRA	shell fragn	nents fron	
%			-										ŧ
%		20.00	PID	0ppm									20
						seling [L Details			Continued	Groundwa		
		et depth of 25.00m bgl.					D	epth	Depth			Casing	Level After
					Tim	e Take		m (m)	To (m)	Tool Used	Strike (m) 8.90		20 Mins (m) 6.00

BOREHOLE LOG											hole No. 3H5 et 3 of 3		
Project I	Name:	London City Airport - Western Terminal Extension	Coordin	ates		Dril	ling Me	ethod:	Dando				е Туре
Project N	No.	HLEI32363	Northing	gs:		Sta	rt Date	: 04/1	1/2014	Casing Diameter (mm)	Casing Dept (m)	th	CP
Location	n:	London City Airport	Easting	s:		End	Date:	06/1	1/2014			s	scale
Client:		London City Airport	Ground	Level: m AC	DD		Logge	d By: RB		Pipe Diamete	er (mm): 50		1:50
Well	Water	Samples	& In Situ	Testing	Level	Thick	Depth	Legend		Docorintio	on Of Strata		
AAGII	Strikes	Dopur (III)	Туре	Results	(m AOD	(m)	(m)	Legenu		Descriptio	on Or Strate	a	
		20.00	SPT D	50 (25 for 95mm/50 for 70mm)									-
		20.00-20.50	B D										-2
		21.00	PID SPT	0ppm 50 (25 for			21.50						-
				50mm/50 for 70mm)				X	Dark o	reenish grey sil NET SAND FOR	ty fine SAI MATION)	ND.	-
		21.50-21.95 21.50-22.00 22.00 22.50 22.50	D B PID ES D	0ppm									- 22
		23.00	SPT	50 (25 for 105mm/50				x					2:
		23.00 23.00-23.45 23.00-23.50 24.00 24.00	PID D B D PID	for 90mm) 0ppm		(3.50)							- 24
		24.50	SPT	50 (25 for				× × × × × ×					Ė
		24.50-24.95	D	85mm/50 for 95mm)			25.00	x					2!
		24.50-25.00 25.00	B PID	0ppm						End of boreh	ole at 25.00 f	11	-
													-2
													-2
													-
													- 2
													-
													-2
													ļ -
													-3
Parasita						seling E)etails				Groundwa	ter Notes	[3
Remarks Iole termina		jet depth of 25.00m bgl.			Cil	iselliy L		epth	Depth		Groundwa	Casing	Level Afte
	Š	Ü			Tir	me Take		om (m)	To (m)	Tool Used	Strike (m) 8.90		20 Mins (n 6.00







BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	17/11/16	4.77	E 542413.4 N 180267.9	34.60m

Client

London City Airport Limited

	BOREHOLE SUMMARY										
Top Base (m) Type Date Started Date Ended Crew Logged By Core Barrel (mm) Core Bit Plant Used/ SPT Hammer Reference											
0.00	34.60	RC	10/11/2016	17/11/2016	TC	СВ	112	PDC	Geotec 350	AR779	
	WATER STRIKES WATER ARRED CHISELLING / SLOW ROLL INC										

WATER STRIKES					WATER	R ADDED	CHISELLING / SLOW DRILLING			
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

НС	DLE	CASING				
Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)			
0.00 34.60	146 146	0.00 24.30	150 150			

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 13.50 14.30 15.30 16.30 16.80 21.00 21.50 22.00 24.50 26.00 27.50 28.80 29.50 30.50 33.50	12.50 13.50 14.30 15.30 16.30 16.80 21.00 21.50 22.00 24.50 26.00 27.50 28.80 29.50 30.50 32.00 33.50 34.60		100 30 100 100 100 100 0 100 0 87 0 87 0 100 100 100 90						

Approved By: OS Log Print Date & Time: Issue No: Checked By: 01 AN 03/03/2017 17:42







BH03

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Co-Ordinates **Date Started** 10/11/16 **Ground Level (mOD)** Final Depth 16/2900 **Date Completed** 17/11/16 34.60m 4.77 E 542413.4 N 180267.9

Client

London City Airport Limited

		PROGR	ESS					SPT DETAILS	8	
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count /75mm	Casing Depth (m)	Water Depth (n
15/11/16	0.00			see Remark 3 & 4	С	12.50	N37	0.0/1.7.11.19		
15/11/16	21.50	17.20	3.80				N50	0, 0 / 1, 7, 11, 18		
16/11/16	21.50	17.20	4.60		C	13.50	N50/0.135	5, 10 / 11, 13, 12, 14		
16/11/16	27.50	16.80	5.10		C	14.50	N50/0.133 N50/0.16	8, 16 / 24, 26		
17/11/16	27.50	17.20	3.90		C	15.50		4, 11 / 21, 26, 3		
17/11/16	34.60	24.30	8.60		C	17.00	N50/0.105	2, 8 / 25, 25		
1 // 1 1/ 10	34.00	24.30	8.00		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		
CENERAL	REMARKS									
		All l	.ld. d	elative to the pontoon level.						
Clearance l	by UXO Magneto	meter probe.		•						
	ent in the borehol- return throughout		tallation through	the dock.						
Pressureme	eter tests carried o	ut at 22.30m, 23.	80m, 26.65m. Te	st at 29.50m depth stopped as						
chalk was ence	ountered.									
KEY		ial, Jar)								
SAMPLES ES - Environn	nental Sample (Tub, V					1			1	
SAMPLES ES - Environn U - 100mm I UT - 100mm I	Diameter Undisturbed Diameter Thin Wall U	ndisturbed Sample								
SAMPLES ES	Diameter Undisturbed Diameter Thin Wall U Diameter Undisturbed S d Sample, B-Bulk San	ndisturbed Sample Sample 1ple, LB- Large Bulk S	Sample, BLK-Block S	ample						
SAMPLES	Diameter Undisturbed Diameter Thin Wall U Diameter Undisturbed S d Sample, B-Bulk Sam nple, W-Water Sample N DETAILS	ndisturbed Sample Sample aple, LB- Large Bulk S , R-Root Sample		ample						
SAMPLES	Diameter Undisturbed Diameter Thin Wall U Diameter Undisturbed 3 d Sample, B-Bulk Sam nple, W-Water Sample N DETAILS bipe Piezometer dwater Monitor Standy	ndisturbed Sample Sample iple, LB- Large Bulk S i, R-Root Sample HOLE	TYPES -Inspection Pit, TP-Ti	ial Pit TT - Trial Trench						
SAMPLES	Diameter Undisturbed Diameter Thin Wall U Diameter Undisturbed 3 d Sample, B-Bulk Sam nple, W-Water Sample N DETAILS sipe Piezometer	ndisturbed Sample Sample piple, LB- Large Bulk S , R-Root Sample HOLE pipe IP Standpipe CP DS	TYPES -Inspection Pit, TP-Ti-Cable Percussion, Ri-Dynamic Sampling,							

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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	Date Completed	17/11/16	4.77	E 542413.4 N 180267.9	34.60m
Client London	City Airport Li	mited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 1 of 4

PROGRESS			STRATA	SAMPLE	S & T	ESTS		nt/
PROGRESS Date Casing Agents Agents Date Casing Agents Mater Casing A	TCR % RQD % Lev	evel Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
15/11/16	The state of the	(11.50)	Water					ln Bs

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	17/11/16	4.77	E 542413.4 N 180267.9	34.60m
Client London	City Airport Li	mited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 2 of 4

PRO	GRE	SS							STRATA	SAMPLE	S & T	ESTS		ent/
Date	Casing	Water	TCR %	SCR %	S Le	vel OD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100		-6	5.73	× × × × × ×		Very soft, dark grey SILT with strong hydrocarbon odour. (DOCK SEDIMENT)	- 11.70 - 11.70	ES01		VOC 19.0ppm	
			30				× × × × × × × × × × × × × × × × × × ×	-(2.00) -(2.00) - - - - -	12.20 becoming slightly gravelly with frequent wood fragments (<200mm). Gravel is angular to subangular fine to coarse flint.	- 12.50 - 12.70 - 12.70 - 12.70	ES02	N37	0, 0 / 1, 7, 11, 18 VOC 0.5ppm	
			100		-8	3.73	000000000000000000000000000000000000000	- - - -	Dark brown, sandy angular to rounded fine to coarse flint GRAVEL with rare flint cobbles. Sand is fine to coarse. (RIVER TERRACE DEPOSITS) 14.20 with rare wood fragments (<120mm)	- 13.50 - 13.50-14.00 - 13.70 - 13.70 - 14.30-15.30 - 14.50	B03 ES04 B05	N50	5, 10 / 11, 13, 12, 14 VOC 0.0ppm 8, 16 / 24, 26	
			100			,	0.0	(3.30)		- 14.70 - 14.70 - 15.30-16.00 - 15.50	ES06 B07	135 mm N50/	VOC 0.1ppm	
			100			,	0.0000000	- - - -	15.60 becoming very sandy	- - - 15.70 - 15.70	ES08	160 mm	VOC 0.1ppm	
			100		-12	2.03	0.0.0	- - - - - - - - - - - - - - - - - - -	No recovery	- 16.70 - 16.70 - 17.00	ES09	N50/ 105 mm	VOC 0.1ppm 2, 8 / 25, 25	
			0							18.50		N50/ 115 mm	9, 16 / 26, 24	
								- - -		- - 20.00		N50/ 125 mm	8, 12 / 26, 24	

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CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	17/11/16	4.77	E 542413.4 N 180267.9	34.60m
Client London	City Airport Li	mited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 3 of 4

PRO	ROGRESS					STRATA	SAMPLE	S & T	ESTS	8				
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 16/11/16	17.20 17.20	3.80 4.60	100		<u>-</u>	16.23	× · · · · · · · · · · · · · · · · · · ·		Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND) 21.50 becoming slightly clayey 21.50 - 21.80 with coarse gravel and cobble size flint	-21.00-21.50 -21.50 -21.50 -21.50	B10	N50/ 180 mm	4, 14 / 15, 23, 12 Pressuremeter Test at 22.30m	
			0				× · · · × · · · × · · · × · · · × · · · · × · · · · · × ·	-		- 23.80 - 24.50		N50/	Pressuremeter Test at 23.80m	
			87				× · · · × · · · × · · · × · · · × · · · · × · · · · × · · · · × ·	- - - - - (8.50) - - - -	25.20 with no clay	24.50 - 25.10	D12 B13	115 mm		
16/11/16 17/11/16	16.80 17.20	5.10 3.90	0				× · · · · · · · · · · · · · · · · · · ·	- - - - - - - - - - - - - - - - - - -		26.65			Pressuremeter Test at 26.65m	
			0				×	-	28.20 with occasional pockets of dark green fine glauconitic sand	- 28.70	B14			
			100	0		24.73 25.03	000	- -29.50 - -29.80 -	Dark grey angular to subangular medium to coarse rinded flint GRAVEL. (THANET SAND FORMATION: BULLHEAD BED)	29.50			Pressuremeter pocket aborted see Remarks	

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started	- 0,, - 0	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	17/11/16	4.77	E 542413.4 N 180267.9	34.60m
Client London	City Airport Li	imited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 4 of 4

	PROGREGG												4 01 4		
PROGR	ESS							STRATA		SAMPLE	S & T	ESTS		nent/	
Date Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description		Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill	
		100						White CHALK recovered as: extremely weak, medium density silty subangular to angular whe chalk COBBLES with occasional light grey m (SEAFORD CHALK FORMATION) 30.60 - 30.75 with occasional medium to cogravel size and rare cobble size angular to subblack rinded flint 30.80 becoming strong and medium density 30.90 with a fracture 31.20 - 31.25 with a band of angular to subcoarse black rinded flint gravel	chite narling. oarse oangular y oangular	-31.40-31.65 -32.00	C15	N48	21, 4 / 9, 10, 11, 18		
		100	67	57			-(4.80) - - - - - - - -	31.75 [NI] recovered as: moderately weak, it density off-white angular to subangular silty of COBBLES 32.00 - 32.20 [NI] recovered as: off-white segravelly SILT. Gravel is angular to subangular medium to coarse black rinded flint 32.35 - 32.40 with a fracture infilled with at to subangular fine to coarse moderately weak, medium density white chalk fragments 32.45 with a fracture 33.20 [NI] recovered as: off-white angular t subangular fine to coarse silty GRAVEL. Gra	chalk soft, very ar angular to	-32.70-33.00 -33.50	C16	N50/ 85 mm	21, 4 / 36, 14		
17/11/16 24.3	0 8.60	90	63	63	-29.83		34.60	comprises extremely weak, medium density of fragments and black rinded flint 33.30 - 33.50 with horizontal, planar, smoot fracture	halk	-33.80-34.10 	C17	83 mm			
								Lind of Boreliote							

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

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

Client

London City Airport Limited

	BOREHOLE SUMMARY														
Top (m)															
0.00	37.50	СР	22/12/2016	05/01/2017	ST	СВ			Dando 175	AR909					

	WA	TER STRIE	KES		WATE	R ADDED	CHISELLING / SLOW DRILLING				
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks	
					12.30 18.00 24.00	16.50 24.00 31.50	21.50 29.50 31.50	24.00 31.50 32.50	2:00 2:10 0:30	Sand Sand Sand	

НС	DLE	CASING			
Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)		
0.00 24.00 37.50	200 200 150	0.00 20.50 27.30	200 200 150		

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	37.50	Cement / Bentonite Grout	05/01/2017										

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ROTARY RECOVERY											
To (m)	Blows	Recovery (%)									

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Date Started 22/12/16 | Ground Level (mOD) **Co-Ordinates** Final Depth 16/2900 **Date Completed** 05/01/17 E 542417.7 N 180296.2 4.89 37.50m

Client

London City Airport Limited

Long	ion City A	Airport L	Annited							
		PROGR	ESS					SPT DETAIL	S	
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Туре	Depth (m)	N Value	Blow Count /75mm	Casing Depth (m)	Water Depth (1
22/12/16	0.00				С	13.50	N40	5, 9 / 12, 8, 8, 12	13.00	1.20
22/12/16	11.50	11.50	1.00	see Remark 3	C	14.50	N30	1, 2 / 3, 7, 8, 12	14.20	2.00
22/12/16	13.50	13.00	1.20		C	15.50	N16	1, 1 / 2, 4, 4, 6	15.30	1.90
22/12/16	14.50	14.20	2.00		C	16.50	N50/0.115	1, 7 / 22, 28	16.40	2.00
22/12/16	15.50	15.30	1.90		S	18.00	N50/0.085	17, 8 / 40, 10	17.00	2.00
22/12/16	16.50	16.40	2.00		S	19.50	N50/0.03	25 / 50	17.00	2.10
2/12/16	17.00	17.00	2.00		S	21.00	N50/0.135	10, 15 / 22, 28	17.00	3.00
3/01/17	17.00	16.50	1.50		S	22.50	N50/0.17	5, 10 / 17, 24, 9	17.00	1.50
3/01/17	18.00	17.00	2.00		S	24.00	N36/0.115	14, 14 / 26, 10	20.50	1.60
3/01/17	19.50	17.00	2.10		S	25.50	N50/0.22	4, 9 / 13, 17, 20	25.40	1.60
3/01/17	21.00	17.00	3.00		S	27.00	N50/0.155	8, 14 / 20, 23, 7	25.50	1.20
3/01/17	22.50	17.00	1.50		S	28.50	N60/0.22	8, 12 / 19, 21, 20	25.50	3.00
3/01/17	24.00	20.50	1.60		S	30.00	N50/0.16	5, 9 / 15, 23, 12	27.30	2.10
3/01/17	24.00	24.00	2.00		S	31.50	N50/0.015	20, 5 / 50	27.30	1.60
4/01/17	24.00	20.50	1.10		S	33.00	N37	6, 5 / 6, 8, 6, 17	27.30	1.20
4/01/17	25.50	25.40	1.60		S	34.50	N50/0.17	9, 7 / 13, 22, 15	27.30	1.50
4/01/17	27.00	25.50	1.20							
4/01/17	28.50	25.50	3.00							
4/01/17	30.00	27.30	2.10							
4/01/17	31.50	27.30	1.60							
4/01/17	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							
. Borehole ca . Clearance b	REMARKS rried out from a poy UXO Magneto cent in the borehole	meter probe.		lative to the pontoon level.						
. Ø200mm c	asing used from p	ontoon level to 1	7.00m depth. Be	entonite seal inserted between to 27.30m depth.						
	nental Sample (Tub, V									
JT - 100mm I J38 - 38mm D O - Disturbed C - Core Sam NSTALLATION		ndisturbed Sample Sample aple, LB- Large Bulk S , R-Root Sample	Sample, BLK-Block S	ample						
PGW - Ground PG/GW - Gas / C WP - Vibrati CM - Incline		oipe IP Standpipe CP DS DC	-Inspection Pit, TP-Tr -Cable Percussion, R -Dynamic Sampling, -Diamond Coring, C	rial Pit TT - Trial Trench C-Rotary Coring, R/S-Rotary/Sonic DS/R-Dynamic Sampling /Rotary P/R-Cable Percussion Rotary follow on Probe, VOC-Volatile Organic Compounds						

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

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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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

				, ,				
Job No	Date Started	22/12/16	Ground L	evel (mOD)	Co-Ordinate	es	Final Depth	
16/2900	Date Completed	05/01/17	4.	89	E 5424	17.7 N 180296.2	37	50m
Client					Method/		Sheet	
London	City Airport L	imited		Plant Used	Cable Percussion	1	of 4	

	OGRI		ултр			TRATA	<u> </u>	SAMPLE	S & T	ESTS		nt/
Date	Casing	Water	Level (mOD)	Legend	Denth	Strata Descri	ption	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
22/12/16					-	Water		-				
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.89	E 542417.7 N 180296.2	37.50m
Client London	City Airport L	imited		Method/ Plant Used Cable Percussion	Sheet 2 of 4

PROGRESS STRATA				· RATA		SAMPLE	ESTS	nt				
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			
22/12/10	11.30	1.00	-7.41	× × × × × × × × × × × × × × × × × × ×	(0.80)	Dark grey slightly gravelly clayey SILT with strong hydrocarbon odour. Gravel is angular subangular fine to coarse flint. (DOCK SEDIMENT) Dark grey slightly sandy silty clayey, angular	to	- 11.80-12.25 - 12.30 - 12.50-13.00	UT02 D03 B04	11 blows	89% Recovery	
22/12/16	12.00	1.20		8 (x 8)	(1.20)	to subangular fine to coarse flint GRAVEL with strong hydrocarbon odour. Sand is fine coarse. (RIVER TERRACE DEPOSITS)	- 1	- 13.50	B04	N40	5,9/12,8,8,12	
22/12/16	13.00	1.20	-8.61		13.50	Yellowish brown very sandy angular to well rounded fine to coarse flint GRAVEL. Sand fine to coarse. (RIVER TERRACE DEPOSITS)	is	13.50-14.00	B05			
22/12/16	14.20	2.00			(3.00)		-	- 14.50 - 14.50-15.00	B06	N30	1, 2 / 3, 7, 8, 12	
22/12/16	15.30	1.90			-			15.50 15.50-16.00	В07	N16	1, 1 / 2, 4, 4, 6	
22/12/16	16.40	2.00	-11.61	× · · · · · · · · · · · · · · · · · · ·	16.50	Light grey fine silty SAND. (THANET SAND FORMATION: THANET SAND)	,	16.50	B08	N50/ 115 mm	1,7/22,28	
03/01/17	16.50	1.50		× · · · · · · · · · · · · · · · · · · ·	-		-	- - - - - - - - - - - - - - - - - - -	B09	N50/	17.8/40.10	
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	

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Date Started 22/12/16 **Ground Level (mOD) Co-Ordinates** Job No Final Depth 16/2900 **Date Completed** 05/01/17 4.89 37.50m E 542417.7 N 180296.2 Client Method/ Sheet **Cable Percussion** 3 of 4 **London City Airport Limited Plant Used**

PRO	OGRI	ESS			Sī	ΓRATA	SAMPI	ES & T	ESTS		nt/
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
03/01/17	17.00	3.00				21.00 becoming slightly clayer	20.50-21.00 21.00 21.50-22.00	D14	N50/ 135 mm	10, 15 / 22, 28	
03/01/17	17.00	1.50		X	- - - - - - - - - - - - - - - - - - -		22.50	D16	N50/ 170 mm	5, 10 / 17, 24, 9	
03/01/17 04/01/17	20.50 20.50	1.60 1.10		X	(13.50)	24.50 becoming very clayey	23.50-24.00 24.00 24.50-25.00	D18	N36/ 115 mm	14, 14 / 26, 10	
04/01/17	25.40	1.60		X	- - - - - - - - - - - - - - - - - - -		25.50	D20	N50/ 220 mm	4, 9 / 13, 17, 20	
04/01/17	25.50	1.20			- - - - - - - - - - - - -		26.50-27.00 27.00 27.50-28.00		N50/ 155 mm	8, 14 / 20, 23, 7	
04/01/17	25.50	3.00					28.50 - 28.50 - 28.50 - 29.50-30.00	D24	N60/ 220 mm	8, 12 / 19, 21, 20	
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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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.89	E 542417.7 N 180296.2	37.50m
Client				Method/	Sheet
London	City Airport Li	imited		Plant Used Cable Percussion	4 of 4

<u></u>			J F		IIIIteu		Tiant Oscu	CAMPIA			1 12		
PRO	OGRI			1		TRATA		SAMPLI	ES & T	ESTS	T:-14	l I	
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 rinded flint GRAVEL. (THANET SAND FORMATIO! BULLHEAD BED) White CHALK recovered as: sil	N:	30.00 30.00-30.50	D26 B27				
					-	subangular fine to coarse GRAV comprises weak medium density fragments and black rinded flint (SEAFORD CHALK FORMAT	EL. Gravel white chalk	31.00-31.50	B28				
04/01/17 05/01/17	27.30 27.30	1.60 2.00			- - - -			31.50	D29	N50/ 15 mm	20, 5 / 50		
								32.50-33.00	B30				
								33.00	B30	N37	6, 5 / 6, 8, 6, 17		
05/01/17	27.30	1.20			-	33.00 [NI] recovered as: whit gravelly SILT. Gravel comprises medium weak medium density of fragments and black rinded flint	chalk	33.00	D31	1037	0, 37 0, 8, 0, 17		
=					(7.40) - -	34.00 with rare cobble size bl flint	ack rinded	34.00-34.50	B32				
05/01/17	27.30	1.50			- - - - - -	34.50 [NI] recovered as: sligh SILT. Gravel comprises angular fine to medium weak medium de fragments	to subangular	34.50	D33	N50/ 170 mm	9, 7 / 13, 22, 15		
=			-32.61		37.50								
; =			-52.01			37.49 [NI] recovered as: firm, gravelly SILT. Gravel comprises medium density angular to suba coarse chalk fragments and blac End of Borehole	s weak ngular fine to						

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ROTARY RECOVERY

Blows

Recovery (%)

To (m)

From (m)

Borehole No

BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	21/12/16	4.68	E 542452.3 N 180279.1	33.95m

Client

London City Airport Limited

Type	Date Started	Date Ended	Crew	T	a			CDD VV
			CIC.	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
СР	19/12/2016	21/12/2016	ST	СВ			Dando 175	AR909
	СР	CP 19/12/2016	CP 19/12/2016 21/12/2016	CP 19/12/2016 21/12/2016 ST	CP 19/12/2016 21/12/2016 ST CB	CP 19/12/2016 21/12/2016 ST CB	CP 19/12/2016 21/12/2016 ST CB	CP 19/12/2016 21/12/2016 ST CB Dando 175

	WATER STRIKES					R ADDED	CHISELLING / SLOW DRILLING			
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks
					17.00	26.00				

НС	DLE	CASING				
Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)			
0.00 24.50 33.95	200 200 150	0.00 17.00 25.00	200 200 150			

ROTARY FLUSH DETAIL										
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									

	(mm)	Installation (m)	Response Zone (m)	Response Zoi (m)	e Installation
		()	()	()	
		BACK	KFILL DETA	ILS	
Top (m))	Bottom (m)	Material	В	nckfill Date
11.90	'	33.95	Cement / Bentoni	te Grout	

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BH05

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Date Started 19/12/16 | **Ground Level (mOD) Co-Ordinates Final Depth** 16/2900 **Date Completed** 21/12/16 E 542452.3 N 180279.1 4.68 33.95m

Client

ndan City Airport Limited

		PROGR	ESS					SPT DETAILS	S	
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Туре	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (n
9/12/16	0.00				C	13.00	N12	3, 2 / 3, 4, 2, 3	12.50	2.00
9/12/16	12.10	11.90	1.20	see Remark 3	c	14.00	N44	5, 14 / 13, 8, 12, 11	13.50	2.50
9/12/16	13.00	12.50	2.00		C	15.00	N53/0.23	1, 3 / 3, 15, 25, 10	14.60	2.70
9/12/16	14.00	13.50	2.50		\parallel s	16.00	N50/0.135	1, 2 / 17, 33	15.50	2.00
9/12/16	15.00	14.60	2.70		\parallel s	17.00	N50/0.07	12, 13 / 50	16.50	1.90
9/12/16	15.50	15.50	2.70		\parallel s	18.50	N50/0.07	13, 12 / 50	17.00	1.60
0/12/16	15.50	15.50	2.00		$\parallel s$	20.00	N50/0.22	6, 8 / 15, 17, 18	17.00	1.00
0/12/16	16.00	15.50	2.00		$\parallel s$	21.50	N50/0.17	8, 14 / 19, 20, 11	17.00	1.30
0/12/16	17.00	16.50	1.90		\parallel s	23.00	N50/0.2	6, 14 / 17, 23, 10	17.00	1.00
0/12/16	18.50	17.00	1.60		\parallel S	24.50	N50/0.275	4, 7 / 13, 13, 14, 10	17.00	1.50
0/12/16	20.00	17.00	1.00		\parallel S	26.00	N50/0.19	6, 12 / 14, 22, 14	25.00	2.00
0/12/16	21.50	17.00	1.30		$\begin{vmatrix} \mathbf{s} \\ \mathbf{s} \end{vmatrix}$	27.50	N50/0.18	7, 12 / 16, 25, 9	25.00	1.00
0/12/16	23.00	17.00	1.00			29.00	N50		25.00	1.60
0/12/16	24.50	17.00	1.50		11	30.50	N50	7, 8 / 10, 12, 10, 18	25.00	1.80
0/12/16	26.00	25.00	2.00		S		N36	4, 5 / 4, 19, 12, 15		3.00
1/12/16	26.00	25.00	1.00		S	32.00	N50 N50	4, 5 / 7, 8, 8, 13	25.00	2.00
1/12/16	27.50	25.00	1.00		S	33.50	1130	5, 5 / 10, 15, 12, 13	25.00	2.00
1/12/16	29.00	25.00	1.60							
1/12/16	30.50	25.00	1.80							
1/12/16	32.00		3.00							
1/12/16	33.50	25.00 25.00	2.00							
1/12/16	33.95	25.00	2.00							
1/12/10	33.93	23.00	2.00							
CNIED 4 I	REMARKS				1					
Borehole c Clearance l Water pres Ø200mm c	arried out from a p by UXO Magneton ent in the boreholon easing used from p	meter probe. e from casing instanton level to 1	tallation through 7.00m depth. Be	elative to the pontoon level. the dock. ntonite seal inserted between to 25.00m depth.						
- 100mm l	mental Sample (Tub, V Diameter Undisturbed Diameter Thin Wall U	Sample								

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

HOLE TYPES

IP -Inspection
CP -Cable Per
DS -Dynamic
DC -Diamond -Inspection Pit, TP-Trial Pit TT - Trial Trench
-Cable Percussion, RC-Rotary Coring, RS-Rotary/Sonic
-Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
-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 Compound 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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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Final Depth		
16/2900	Date Completed	21/12/16	4.68	E 542452.3 N 180279.1	33.95m	
Client	City Airport Li	mitad		Method/ Plant Used Cable Percussion	Sheet 1 of 4	

	OGRI		ултр			TRATA	<u> </u>	SAMPLE	ES & T	ESTS		nt/
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Des	cription	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
19/12/16					- - -	Water		-				
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	21/12/16	4.68	E 542452.3 N 180279.1	33.95m
Client London	City Airport Li	imited		Method/ Plant Used Cable Percussion	Sheet 2 of 4

Principle Prin	PROGRESS STRATA			y An p			TD A T A		CAMDII	70 0 T	тесте	2 01 4	73
19/12/16 11.90 12.0	1100						INATA					Field	men
19/12/16 12.50 2.00 2.	Date	Casin	Wate	Level (mOD)	Legend	-	Strata Description						Instru Backf
19/12/16 12.50 2.00 2.						- - -			-				
19/12/16 12.50 2.00 2.						- -			- - -				
19/12/16 12.50 2.00 2.						- - -			- - -				
19/12/16 12.50 2.00 2.						-			_ - -				
19/12/16 12.50 2.00 2.						- -			- -				
19/12/16 12.50 2.00 2.				7 22		- - - 11.00			- - -				
19/12/16 12.50 2.00 2.	19/12/16	11.90	1.20	-1.22	×—×	_	Soft, dark grey clayey SILT. (DOCK SEDIMENT)		12.10-12.55	UT01	10 blows	100% Recovery	
19/12/16 12.50 2.00 2.50 2.				-7 82	^ <u>~</u> ~ }	- ` ´	(= = = = = = = = = = = = = = = = = = =		- 12.50-13.00	B02			
19/12/16 12.50 2.00				-7.87/	000	12.55/	Yellowish brown gravelly fine to SAND. Gravel is angular to sub	o coarse		D03			
19/12/16 13.50 2.	19/12/16	12.50	2.00		°0 5°0	_	to coarse flint.			B04	N12	3, 2 / 3, 4, 2, 3	
19/12/16 13.50 2.50					0.00		hydrocarbon odour. Gravel is ar	ngular to	- -				
19/12/16 13.50 2.50 13.00					0004	-	coarse.		-				
19/12/16 14.60 2.70 2.	19/12/16	13.50	2.50		0.00	- -	13.00 becoming clayey with resubangular flint cobbles and rare	are angular to			N44	5, 14 / 13, 8, 12, 11	
19/12/16					0 1 0 1	_	plastic 14.00 becoming very sandy w	_	- 14.00-14.50 -	B05			
19/12/16					000	- (3.43) - -	and no hydrocarbon odour						
19/12/16 15.50 2.00 2.	10/12/16	14.60	2.70		000	- - -			- 15.00		N53/	1 3/3 15 25 10	
19/12/16 15.50 2.70 2.00 2.00 2.00 2.00 2.00 2.00 2.0	19/12/10	14.60	2.70		0.00	- -		own clay	- - -			1, 3 / 3, 13, 23, 10	
20/12/16 17.00 1.60 2.00 -11.32 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					°0 0	- -	(Toman)		- 15.00-15.50 -	B06			
20/12/16 15.50 2.00	20/12/10	13.30	2.00		0.00	- - -			-				
20/12/16 17:00 1:00 1:00 1:00 1:00 1:00 1:00 1:0	20/12/16	15.50	2.00	-11.32	0 <u>0 0</u>	16.00	Light grey silty fine SAND.		16.00			1, 2 / 17, 33	
20/12/16 16.50 1.90					× '.'.'	-		N: IHANEI					
20/12/16 17.00 1.60					×	- - -			- - -				
20/12/16 17:00 1:00	20/12/16	16.50	1.90		× · . · . ·	-			17.00			12, 13 / 50	
20/12/16 17:00 1:00 1:00 1:00 1:00 1:00 1:00 1:0					× '.'.'	- -			- - 17.00 - 17.50-18.00	D09 B10			
20/12/16 17:00 1:00 1:00 1:00 1:00 1:00 1:00 1:0					× '.'.'	- - -			-				
20/12/16 17.00 1.60					×	-			_				
20/12/16 17 00 1 00	20/12/25	15.00			×	-			1950		N50/	12 12 / 50	
20/12/16 17 00 1 00 1 00 1 00 1 00 1 00 1 00 1	20/12/16	17.00	1.60			-			-			13, 14/30	
20/12/16 17 00 1 00 N50/ 6, 8 / 15, 17, 18						- - -			- 18.50 - 19.00-20.00	D11 B12			
20/12/16 17:00 1:00 X X X X X X X X X X X X X X X X X X					× .	- - -	19.00 becoming slightly claye	y	- - -				
20/12/16 17 00 1 00					×	- - -			-				
	20/12/16	17.00	1.00		×.	- - -			20.00			6, 8 / 15, 17, 18	

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	21/12/16	4.68	E 542452.3 N 180279.1	33.95m
Client London	City Airport Li	imited		Method/ Plant Used Cable Percussion	Sheet 3 of 4

			y An p			TD A T A	CAMPI	F.C. 0. 7E	ECTC	7 01 4	T >-
PRO	OGRI					TRATA	SAMPL	ES & T	ESTS	F: 11	l l
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
					- - - - - - - -		20.00 20.50-21.00	D13 B14			
20/12/16	17.00	1.30		×	-		21.50		N50/ 170 mm	8, 14 / 19, 20, 11	
				× · · · · · · · · · · · · · · · · · · ·	(12.80)	22.00 becoming clayey	21.50 22.00-22.50	D15 B16			
20/12/16	17.00	1.00		×	-		23.00		N50/ 200 mm	6, 14 / 17, 23, 10	
				× · · · · · · · · · · · · · · · · · · ·	- - - - - - -		23.00 23.50-24.00	D17 B18			
20/12/16	17.00	1.50			- - - - - - - - - - -	25.00 becoming very clayey	24.50 - 24.50 - 25.00-25.50	D19 B20	N50/ 275 mm	4,7/13,13,14,10	
20/12/16 21/12/16	25.00 25.00	2.00		× · · · · · · · · · · · · · · · · · · ·	- - - - - -		26.00	D21	N50/ 190 mm	6, 12 / 14, 22, 14	
21/12/16	25.00	1.00			- - - - - - - - - -		26.50-27.00	B22	N50/ 180 mm	7, 12 / 16, 25, 9	
				×	- - - - - - - -		27.50-27.90 28.00-28.50	D23 B24	100 mm		
21/12/16	25.00	1.60	-24.12 -24.32	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	28.80	Black angular to subangular fine rinded flint GRAVEL. (THANET SAND FORMATIO! BULLHEAD BED) White CHALK recovered as: fin gravelly SILT. Gravel is angular subangular fine to coarse black i (SEAFORD CHALK FORMAT	N: 29.00-29.50 m, white	D25 D26 B27	N50	7,8/10,12,10,18	
					-	(SEAFORD CHALK FORMAT	ION)				

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	21/12/16	4.68	E 542452.3 N 180279.1	33.95m
Client London	City Airport L	imited		Method/ Plant Used Cable Percussion	Sheet 4 of 4

	ondo	n Cit	y Airpo	ort Li	mited		Plant Used	Cable Per	cussion	1	4 of 4	
PRO	OGRI	ESS			ST	TRATA		SAMPLE	ES & T	ESTS		ent/
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				29.50 [NI] recovered as: silty subangular fine to coarse GRA\ black rinded flint cobbles. Grav weak, medium density chalk fra black rinded flint 30.50 [NI] recovered as: soft, SILT. Gravel is angular to suba coarse black rinded flint	/EL with rare /el comprises gments and	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			(4.95)	32.00 [NI] recovered as: firm gravelly SILT. Gravel is angula subangular fine to coarse weak, density chalk fragments 32.50 with no black rinded flater	, white slightly r to medium int 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 25.00	2.00	-29.27		33.95	33.50 [NI] recovered as: whit gravelly SILT. Gravel is angula subangular fine to coarse weak, density chalk fragments End of Borehole	r to	33.50	D32	N50	5, 5 / 10, 15, 12, 13	
					-			- - - - - - - - -				
21/12/16					- - - - - -			- - - - - - - - -				
					-			- - - - - - - - -				
=					- - - - - - -			- - - - - - - - -				
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BH06

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	28/11/16	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	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 15.20	1.20 15.20 30.80	IP DS RC	24/11/2016 24/11/2016 29/11/2016	24/11/2016 29/11/2016 01/12/2016	JB JB JB	CB CB CB	112	PDC	Hand Excavated Comacchio 405 Comacchio 405	C1 C1		

WATER STRIKES				WATER STRIKES WATER ADDED			CHIS	SELLIN (G / SLOW I	DRILLING
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

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

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

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

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

Blows

Recovery (%)

From (m) To (m)

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

 Job No
 Date Started
 28/11/16
 Ground Level (mOD)
 Co-Ordinates
 Final Depth

 16/2900
 Date Completed
 01/12/16
 5.69
 E 542560.3
 N 180240.5
 30.80m

Client

London City Airport Limited

		PROGR	ESS		SPT DETAILS					
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Туре	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m
24/11/16	0.00				S	1.20	N5	1, 2 / 1, 1, 2, 1	0.00	
24/11/16	4.20	4.20			S	2.20	N4	1, 1 / 1, 1, 1, 1	0.00	
25/11/16	4.20	4.20			S	3.20	N4	1, 2 / 2, 0, 1, 1	0.00	
25/11/16	7.20	7.20			S	4.20	N8	2, 2 / 2, 1, 3, 2	4.20	
28/11/16	7.20	7.20			S	5.20	N7	1, 2 / 1, 2, 2, 2	5.20	
28/11/16 29/11/16	14.20 14.20	14.50			S	6.20	N2	0, 0 / 1, 0, 0, 1	5.20	
29/11/16 29/11/16	20.30	14.50			S	7.20	N0	0,0/0,0,0,0	7.20	
	20.30	14.50			S	8.20	N0	0,0/0,0,0,0	8.20	
30/11/16 30/11/16	30.80	14.50 14.50			S	9.20	NO	0,0/0,0,0,0	9.20	
30/11/10	30.80	14.30			S	10.20	NO	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				il					
Inspection	oit hand excavate	d prior to boring.								
Clearance b	y UXO Magnetor	meter probe.		ary boring carried out						
thereafter.	ter tests carried o			.,						
i. Tressureme	ter tests curried o	at at 13.00m and	25.40m depths.							
KEY					il					
SAMPLES ES - Environm	ental Sample (Tub, V	ial, Jar)								
U - 100mm I UT - 100mm I	Diameter Undisturbed Diameter Thin Wall U	Sample ndisturbed Sample								
 D - Disturbed 	iameter Undisturbed S Sample, B-Bulk Sam	ple, LB- Large Bulk S	Sample, BLK-Block Sa	imple						
INSTALLATION		· -	TYPES							
SPGW - Ground	ipe Piezometer Iwater Monitor Standp Froundwater Monitor S	pipe IP	-Inspection Pit, TP-Tri	al Pit TT - Trial Trench -Rotary Coring, R/S-Rotary/Sonic						
	ng Wire Piezometer	DS	 Dynamic Sampling, I 	PS/R-Dynamic Sampling /Rotary /R-Cable Percussion Rotary follow on						
				Probe, VOC-Volatile Organic Compound]				1	I

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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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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client London	City Airport L	imited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 1 of 6

PROC		SS							STRATA	SAMPLE	ES & T	ESTS		ent/
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/
4/11/16								-(0.40)	CONCRETE (0.30m) over concrete rubble.	-				<i>D</i>
						5.29		(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)	- - - 0.60 - 0.60	ES01		VOC 0.4ppm	
								-	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)	- - - 1.00 - 1.20	ES02	N5	VOC 0.6ppm	
								- -		- 1.20 - 1.20 - 1.50	D03	N3	VOC 2.1ppm	
			100					(1.65)	1.70 becoming fine to coarse 1.80 becoming very gravelly	- 1.50 - 1.70-2.00	ES04 B05		, oc 2.1ppm	
								-		- - 2.20 - 2.20	D06	N4	1, 1 / 1, 1, 1, 1	
			100			3.29		2.40	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	2.50 - 2.50	ES07		VOC 2.8ppm	
			100			2.49		-(0.60) - - 3.20	Angular to subrounded fine to coarse flint Orangish brown gravelly fine to coarse SAND. Gravel is angular to rounded fine to coarse flint. (MADE GROUND) 2.90 becoming fine to medium	- - - 3.00-3.10 - 3.10 - 3.20	B08 B09	N4	1,2/2,0,1,1	[eH]
						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) Brown, slightly clayey very sandy GRAVEL. Gravel is angular	3.20	D10			
			0			1.99		3.70	to well rounded fine to coarse flint. Sand is fine to coarse. (MADE GROUND) Orangish brown silty very clayey fine to medium SAND. (MADE GROUND) Soft, orangish brown slightly sandy silty CLAY with occasional	3.70	D11			
/11/16 /11/16	4.20 4.20					1.49		(0.30) 4.20	dark grey staining. (MADE GROUND) Dark brown gravelly fine to coarse SAND. Gravel is angular to well rounded fine to coarse flint. (MADE GROUND)	- 4.10 - 4.10 - 4.20 - 4.20	ES12 D13	N8	VOC 0.5ppm 2, 2 / 2, 1, 3, 2	
			100			0.98		(0.50)	Brown, very sandy angular to well rounded fine to coarse flint GRAVEL. Sand is fine to coarse. (MADE GROUND) Soft, yellowish brown silty CLAY with occasional to frequent	- - -				
						0.89		4.80 - 4.95 -	dark grey staining. (MADE GROUND) 4.75 with occasional reddish brown fine to coarse gravel size brick fragments Brown very sandy angular to well rounded fine to coarse flint	- - - - 5.20		N7	1, 2 / 1, 2, 2, 2	
								- -(0.70) -	GRAVEL. Sand is fine to coarse. (MADE GROUND) 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	- 5.20 	D14	117	-, -, -, -, -, -	
			80			0.03		- 5.65 - -	angular to subrounced line to medium linit 5.50 with occasional wood fragments (<85mm) 5.60 with rare tile fragments (<20mm) Light brown gravelly fine to medium SAND. Gravel is angular to rounded fine to coarse flint. (MADE GROUND)	5.70 - 5.70 -	ES15		VOC 0.2ppm	

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client London	City Airport Li	imited		Method/ Dynamic Sampling / Rotary	Sheet 2 of 6

PRO	GRF	ESS							STRATA	SA	MPLE	S & T	ESTS	7
Date	Casing	Water	TCR %	SCR %	RQD $\%$	Level (mOD)	Legend	Depth (Thickness)	Strata Description		Depth (m)	Type No	Test Result	Field Records
			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)	-	6.20		N2	0,0/1,0,0,1
						-0.82		6.50	Very soft to soft, dark grey SILT with strong hydrocarbon odour.	-	6.50 6.50	ES16		VOC 0.2ppm
			100			-1.02		6.70 - -(0.40)	(MADE GROUND) Orangish brown gravelly fine to coarse SAND. Gravel is fine to coarse angular to rounded flint. (MADE GROUND)	- - -	6.80	B17		
25/11/16 28/11/16	7.20 7.20					-1.42	× - × - × - ×	7.10	Very soft to soft, dark grey clayey SILT with hydrocarbon odour. (ALLUVIUM)	- - -	7.20 7.20	D18	N0	0,0/0,0,0,0
			50				× - ×	-		- - -	7.50 7.50	ES19		VOC 0.2ppm
			30				× × × ×	-		- - -	8.00	D20		0
							×— ×— - ×	(2.10)		- - -	8.20 8.20	D21	N0	0,0/0,0,0,0
			80				^ × × *	- - -		- - -	8.50 8.50	ES22		VOC 0.3ppm
							× × × ×	-	8.90 becoming soft	- - -	9.00	D23		
						-3.52	× × ×	9.20	Soft, brownish grey silty CLAY with organic odour. (ALLUVIUM)	- -	9.20 9.20	D24	N0	0,0/0,0,0,0
			100				X X X X X X X X X X	- - -		- - -	9.50 9.50	ES25		VOC 0.3ppm
							X	-		- -	10.00	D26		
							* X X X X	-(1.80) - -		- - -	10.20 10.20	D27	N0	0, 0 / 0, 0, 0, 0
							 	- -		- - -	10.50	D28		
			60			-5.32	X X X X X X X X X X X X X X X X X X X	- - 11.00	10.70 becoming firm with occasional dark grey staining	- - -				
							00000	-	Dark brown sandy GRAVEL. Gravel is angular to well rounded fine to coarse flint. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	-	11.20		N54	4, 8 / 13, 13, 14, 14
			100				000	- - (1.50)		- - -				
							0.0	- (1.50)		-				

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CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client London	City Airport L	imited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 3 of 6

PRO	GRE	SS							STRATA	SAMPLE	ES & T	ESTS		ent/
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	\Box	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100			-6.82	0000		12.20 becoming slightly sandy	- 12.20 - 12.50-13.10	B29	N47	3, 7 / 9, 12, 13, 13	
			80			-0.82		(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	000	-	13.10 becoming very gravelly with flint cobbles 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 - 13.20-13.50 	B30	N12	1, 2 / 2, 2, 4, 4	
28/11/16 29/11/16	14.50		100				00.000	-(1.20) -	13.70 with no sand	- - - - 14.20		N52	3, 4 / 6, 14, 16, 16	
29/11/16	14.50		100			-8.72 -8.82	000	14.40	Yellowish brown gravelly fine to coarse SAND. Gravel is angular to well rounded fine to coarse flint. (RIVER TERRACE DEPOSITS) Light grey silty fine SAND. (THANET SAND FORMATION: THANET SAND)	- - - - -				
							x			15.00-15.20 - 15.20 	B31	N50/ 180 mm	9, 11 / 14, 18, 18	
			24				×			- - 15.80 - - - -			Pressuremeter test at 15.80m depth	
			27				×	-	16.80 becoming clayey	- - - - 16.80-17.30	B32			
							× · · · · · · · · · · · · · · · · · · ·	-	17.30 becoming slightly clayey	- - - 17.30 - - 17.50-17.90	B33	N50/ 115 mm	10, 10 / 25, 25	
			100				× .	-		- - -				

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CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client London	City Airport L	Method/ Dynamic Sampling / Plant Used Rotary	Sheet 4 of 6		

	$\overline{}$	II por t Ellino	STRATA	CAMPIES & T	Tere
PROGRESS Date Casing Agents Casing Agents Casing Agents Casing Agents Agents Casing Agents	TCR % SCR %	Level Depti (mOD)		SAMPLES & T Depth Type No	Test Result Records 28 Records 28 Records 29 Records 20
	100	X			N50/ 105 mm
29/11/16 14.50 30/11/16 14.50	100		19.50 becoming clayey	- 19.80-20.10 B34 20.30	N50/ 245 mm 5, 11 / 12, 13, 17, 8
	100	\(\frac{1}{2}\) \(\frac{1}\) \(\frac{1}{2}\) \(\frac{1}{2}\) \(\frac{1}{2}\) \(\frac{1}{2}\) \(\frac{1}{2}\) \		- 21.80 D36	N37 3, 4/7, 9, 10, 11
	100			- - - - - - - -	N37 3,4/7,9,10,11
	100		23.30 becoming locally very clayey	- 23.30 - 23.30 - 23.30 - 23.30 - 24.00-24.70 B39	N39 4,5/6,10,11,12
		1 1X .L			

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client London	City Airport L	imited		Method/ Plant Used Dynamic Sampling Rotary	5 of 6

PRC)GRI	ESS							STRATA	SAMPLE	S & T	ESTS	7 7 7	ent
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	7	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
			100	-			x	-		- - - - 24.80 - 24.80	D40	N38	4,6/7,8,10,13	
			67				× · · · · · · · · · · · · · · · · · · ·	- - - - - - - - -	25.30 becoming very clayey	- - - 25.30-25.70 - 25.40	B41		Pressuremeter test at 25.40m depth	
:						-20.52 -20.62	× · · · · · · · · · · · · · · · · · · ·	26.20	Black angular to subangular medium to coarse rinded flint GRAVEL with rare angular to subangular rinded flint cobbles. (THANET SAND FORMATION: BÜLLHEAD BED) Strong, medium density white CHALK with occasional light	- - - - - - -				
			100	63	53			-	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 with a horizontal fracture and at 27.75m	- 27.50-27.75 - 27.80	C42	N50/ 105 mm	3, 15 / 20, 30	
			90	66	57			(4.50)	27.80 - 27.90 [NI] recovered as: soft, white gravelly SILT. Gravel is weak, medium density angular to subangular fine to coarse chalk fragments 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 28.55 - 28.65 [NI] recovered as: moderately strong, medium density white chalk COBBLES	27.80 	D43			
								-	28.85 with a subvertical fracture 29.00 - 29.10 with occasional subhorizontal fractures 29.25 - 29.30 [NI] recovered as: angular to subangular fine to coarse silty GRAVEL. Gravel comprises weak, medium	- - - - 29.30 - 29.30	D44	N28	5, 6 / 6, 6, 6, 10	
			100	63	27			-	density white chalk fragments 29.50 - 29.70 with 1No wide open fracture 29.70 - 29.80 with occasional subvertical fractures	- - - -				

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CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	28/11/16	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	01/12/16	5.69	E 542560.3 N 180240.5	30.80m
Client				Method/ Dynamic Sampling /	Sheet
London	City Airport L	imited		Plant Used Rotary	6 of 6

Date		OGR	DE														
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 30.45 with 1No open horizontal fracture 30.50 with occasional subvertical off-white open fractures 30.71 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 white chalk cobbles. Gravel is moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density white chalk ragments	D.		XL.	<u>55</u>							STRATA		SAMPLE	S & T	ESTS		ent/
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 30.45 with 1No open horizontal fracture 30.50 with occasional subvertical off-white open fractures 30.71 NI recovered as: angular to subangular fine to coarse sity GRAVEL with rare moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density weak, medium density white chalk cobbles. Gravel is moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density white chalk cobbles. Gravel is moderately weak, medium density weak, medium density white chalk cobbles. Gravel is moderately weak, medium density weak, medium density white chalk cobbles. Gravel is moderately weak, medium density weak, medium density weak, medium density white chalk cobbles. Gravel is moderately weak, medium density d	Date	Casing	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)) 1	Depth (Thickness)			Depth (m)	Type No	Test Result	Field Records	Instrum Backfill
				Water							30.00 - 30.10 [NI] recovered as: white g comprises angular to subangular fine to co density chalk fragments and black rinded f 30.45 with 1No open horizontal fractur 30.50 with occasional subvertical off-w 30.70 [NI] recovered as: angular to sub sitty GRAVEL with rare moderately weak, white chalk cobbles. Gravel is moderately density chalk fragments	ravelly SILT. Gravel arse weak, medium lint	(m) _ 30.10-30.40 - - - - - - - - - - - - - - - - - -	C45		Records	Instrument/ Backfill

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started	03/01/17	Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	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	15.80 33.50	DS RC	14/12/2016 15/12/2016	15/12/2016 16/12/2016	TC TC	CB CB	112	PDC	Geotec 350 Geotec 350	AR779 AR779	

WATER STRIKES				WATER ADDED CHISELLING / SLOW DR			DRILLING			
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

НС	DLE	CASING			
Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)		
0.00 15.80 33.50	150 150 146	0.00 13.50	150 150		

	ROTARY FLUSH DETAIL								
From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour					
15.80 16.90 18.20 22.70	16.90 18.20 22.70 33.50	Water Water Water Water	20 10 0 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										
Blows	Recovery (%)									
	100 100 80 100 73 91 93 93									
	93 100 100 93 100 60 100 100									

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

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Co-Ordinates **Date Started** 03/01/17 | **Ground Level (mOD)** Final Depth 16/2900 **Date Completed** 05/01/17 4.95 33.50m E 542513.8 N 180296.4

Client

London City Airport Limited

		PROGR	ESS					SPT DETAILS	S	
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Туре	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
03/01/17 03/01/17 03/01/17 04/01/17 04/01/17 05/01/17 05/01/17	0.00 12.50 14.80 14.80 15.80 22.70 22.70 33.50	12.50 12.50 12.50 13.50 13.50 13.50 13.50	1.80 4.80 2.10 3.20 2.10	Rotary flush	S S S S S S S S	16.90 18.20 19.70 21.20 23.00 24.50 26.00 27.50 29.00	N50/0.075 N50/0.095 N50/0.15 N50/0.16 N50/0.22 N50/0.245 N50/0.255 N50/0.23 N50/0.02	25/50 18,7/39,11 8,15/24,26 11,14/22,26,2 6,11/15,18,17 3,9/12,13,18,7 6,9/12,13,15,10 7,9/14,16,18,2 25/50	13.50 13.50 13.50 13.50 13.50 13.50 13.50 13.50	
I. Borehole ca 2. Clearance b 3. Dynamic sa thereafter. 4. Water presc 5. Poor flush r SAMPLES ES - Environm U - 100mm I USB - 38mm D D - Disturbed C - Core Sam INSTALLATION SPIE - Standp SPGW - Groun SPG/GW - Gas / C VWP - Vibrati ICM - Inclino	y UXO Magneto mpling technique nt in the borehol eturn throughout ental Sample (Tub. V nameter Undisturbed sameter Thin Wall tu sameter Undisturbed sameter Sample, B-Bulk San pie, W-Watter Sample DETAILS pep Hewatter Sample output per Piezometer meter	ial, Jar) Sample Sample Jiel B. Large Bulk S. R. Root Sample Sample Jiel B. Large Bulk S. R. Root Sample Dipe Dipe Dipe Dipe Dipe Dipe Dipe Dip	Om to 15.80m. R tallation through sample, BLK-Block S TYPES Inspection Pit, TP-T Cable Percussion, R Dynamic Sampling, D-Diamond Cornic Sampling,							

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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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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.95	E 542513.8 N 180296.4	33.50m
Client London	City Airport Li	imited		Method/ Dynamic Sampling / Plant Used Rotary	Sheet 1 of 4

PRO	GRF	SS							STRATA	•	SAMPLE	S & T	ESTS		nt/
PRO Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)		ta Description	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
03/01/17				S	R R			(11.80)	Water						II B

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CADP Surveys Ground Investigation (Dock) - Phase 2

			Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.95	E 542513.8 N 180296.4	33.50m
Client London	City Airport Li	imited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 2 of 4

	JUIIU	UII V		y 1	AII.	por	ιLI	mite	<u>u</u>	Plant Used	Kotar	<u>y</u>		2 01 4	
PRO									STRATA		SAMPL	ES & T	ESTS		ent/
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	1	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
						-6.86					-				X / / / /
03/01/17	12.50		100			7.97	* × × × × × × × × × × × × × × × × × × ×	-(1.00)	Very soft, dark grey SILT with stror odour. (DOCK SEDIMENT) 12.30 becoming clayey 12.50 becoming firm very clayey hydrocarbon odour		- 12.00 - 12.00 - 12.50 - 12.50	ES01		VOC 2.5ppm	
		٠	100			-8.36	80 /\ 80 /\	(0.50)	Dark grey, silty very sandy angular fine to coarse flint GRAVEL with s odour. Sand is fine to coarse (RIVER TERRACE DEPOSITS) Dark brown, gravelly fine to coarse hydrocarbon odour. Gravel is angul	SAND with	- 13.50	D03			
			80			-9.66		(1.30)	to coarse flint. (RIVER TERRACE DEPOSITS)		- - 14.00 - 14.00	ES04		VOC 2.0ppm	
03/01/17 04/01/17	12.50 12.50	1.80 4.80	100			-10.41	0 0 0 0 X	(0.75)	Brown very sandy angular to well re coarse flint GRAVEL. Sand is fine (RIVER TERRACE DEPOSITS) 14.80 with no sand Light grey silty fine SAND. (THANET SAND FORMATION: 1	to coarse.	- - - - - - - - -	B05			
04/01/17	13.50		73				×	-	(ITIANET SAND FORMATION, I	IRANET SAND)	- - - - - - - - - - - -	B06			
		,					×	-			- - - - - - - - - - - - - - - - - - -	D07 B08	N50/ 75 mm	25 / 50	
			91				× · · · · · · · · · · · · · · · · · · ·				- - - - - 18.20		N50/ 95 mm	18,7/39,11	
			93				×		19.00 becoming clayey		- 18.20 - 18.50 	D09 B10			
			93				×	- - - - -			- - - 19.70 - -		N50/ 150 mm	8, 15 / 24, 26	

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	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.95	E 542513.8 N 180296.4	33.50m
Client London	City Airport L	imited		Method/ Plant Used Dynamic Sampling / Rotary	Sheet 3 of 4

PRO	GRE	ESS							STRATA	SA	AMPLE	S & T	ESTS		ent/
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 20.50 21.20	D11 B12	N50/ 160 mm	11, 14 / 22, 26, 2	
04/01/17	13 50	2 10	93				× · · · · · · · · · · · · · · · · · · ·	(12.95)		-	22.00	B13			
05/01/17	13.50	3.20	100				× .	- - - - - -	22.70 becoming very clayey	- - - - - -	23.00 23.00	D14	N50/ 220 mm	6, 11 / 15, 18, 17	
			100				× · · · · · · · · · · · · · · · · · · ·	- - - - - - -			24.00 24.50	B15	N50/	3, 9 / 12, 13, 18, 7	
			93				×	-			25.00	B16	245 mm		
							× .	- - - - - - -		- - - - - - -	26.00 26.00	D17	N50/ 255 mm	6,9/12,13,15,10	
			100				× · · · · · · · · · · · · · · · · · · ·	- - - - - - -		- - - - - -	27.00 27.50	B18	N50/	7, 9 / 14, 16, 18, 2	
			60			-23.36	× · · · · · · · · · · · · · · · · · · ·	28.30	Black angular to subangular fine to coarse rinded flint GRAVEL with rare cobbles. Cobbles are angular to	- - - - - - - -	28.00	B19	230 mm		
						-24.26	8000	(0.90)	subangular rinded flint. (THANET SAND FORMATION: BULLHEAD BED)	- - - - - - - -	29.00		N50/ 20 mm	25 / 50	
			100	77	60			- - - - -	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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CADP Surveys Ground Investigation (Dock) - Phase 2

Job No	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
16/2900	Date Completed	05/01/17	4.95	E 542513.8 N 180296.4	33.50m
Client London	City Airport L	imited		Method/ Dynamic Sampling / Plant Used Rotary	Sheet 4 of 4

Date Section Strata Samples Street Section Strata Description Depth Type Test Records Supplementary <u> </u>				J ·		Por		шие		oscu —	Rotary		<u> </u>	4 01 4		
29.90 with 1No horizontal 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 inided flint 30.45 with 1No subhorizontal fracture and at 30.95 m. [NI] recovered as: very silty angular to subangular fine to coarse GRAVEL Gravel comprises weak, medium density chalk fragments and black inided flint 30.90 with 1No horizontal fracture and at 30.95 m. 31.10 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 subhorizontal fracture 31.50 with 1No subhorizontal fracture and at 31.90 m. 32.00 - 32.50 [NI] recovered as: very silty angular to subangular fine to coarse black rinded flint 31.40 with 1No subhorizontal fracture and at 31.90 m. 32.00 - 32.50 [NI] recovered as: very silty angular fracture and at 31.90 m. 31.10 with 1No subhorizontal fracture and at 31.90 m. 32.00 - 32.50 [NI] recovered as: very silty angular fine to coarse black rinded flint 32.40 - 32.50 with 1No point of the first object of the	PRO		ESS				1			STRATA		SAMPLE	S & T	ESTS		ent/
29.90 with 1No horizontal fracture and subscribed fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fractures and subhorizontal fracture and subhorizontal fracture and subangular fine to coarse GRAVEL Gravel comprises weak, medium density chalk fragments and black rinded flint 30.45 with 1No subhorizontal fracture and at 30.90 with 1No horizontal fracture and at 30.90 models weak, medium density gravel size chalk fragments and angular to subangular fine to coarse black rinded flint 31.40 with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and at 31.90 models with 1No subhorizontal fracture and 131.90	Date	Casing	Water	TCR %	SCR %	RQD %		Legend		Strata Description						Instrum Backfill
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 subhorizontal fracture 31.55 with 1No wide open fracture and at 31.90m 32.50 - 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 black rinded flint 32.60 with 1No horizontal fracture infilled with angular to subangular fine to coarse black rinded flint 32.60 with 1No horizontal fracture infilled with angular to subangular fine to coarse black rinded flint 32.60 with 1No horizontal fracture infilled with angular to subangular fine to coarse black rinded flint obbles 33.40 with 1No open fracture and at 33.45m									(4.30)	29.90 with 1No horizontal fracture 30.00 - 30.20 with occasional subvertic and subhorizontal fractures 30.20 - 30.40 [NI] recovered as: very sil to subangular fine to coarse GRAVEL. Gr comprises weak, medium density chalk frablack rinded flint 30.45 with 1No subhorizontal fracture 30.50 - 30.90 [NI] recovered as: very sil to subangular fine to coarse GRAVEL. Gr comprises weak, medium density chalk frablack rinded flint 30.90 with 1No horizontal fracture and 31.10 with 1No wide open fracture	lty angular ravel agments and lty angular ravel agments and at 30.95m	- - -				
	05/01/17	13.50	2.10	100	73	63	-28.56		33.50	31.10 with 1No wide open fracture 31.30 with 1No wide open fracture infil weak, medium density gravel size chalk frand angular to subangular fine to coarse bilint 31.40 with 1No subhorizontal fracture 31.50 with 1No subvertical fracture 31.55 with 1No wide open fracture and 32.00 - 32.50 [NI] recovered as: very sil GRAVEL. Gravel comprises weak, mediu chalk fragments and angular to subangular coarse black rinded flint 32.40 - 32.50 with angular to subangular coarse black rinded flint 32.60 with 1No horizontal fracture infil angular to subangular fine to coarse gravel comprises weak, medium density chalk frarare black rinded flint cobbles 33.40 with 1No open fracture and at 33	lled with ragments lack rinded at 31.90m lty um density r fine to ar fine to lled with l. Gravel agments and	- - -32.60-32.90	C23			

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