Borehole record

Nicholls Boreholes

British Geological Survey — Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003)

Soakaway 1

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33458 57112 Please attach site plan

Ground level (if known) _____ metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 4-05-16 (DD/MM/YYYY) Completed 4-05-16 (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) _____ metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter

250	mm from	G/L	to	11.6 m/depth
	mm from		to	m/depth
	mm from		to	m/depth
	mm from		to	m/depth

Casing material and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material PLASTIC Solid	diameter 165	mm from G/L	to 5.6	m/depth
Casing material PLASTIC SLOTTED	diameter 165	mm from 5.6	to 11.6	m/depth
Casing material	diameter	mm from	to	m/depth
Casing material	diameter	mm from	to	m/depth

Grouting details 20 Bags Shingle, 5 Bags Mikalit

Waterstruckat 1. _____ m (depth below datum - mbd) 2. _____ m (mbd)

3. _____ m (mbd) 4. _____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) _____ m. Please tick if this is above D or below D ground level.

Pump suction depth _____ mbd

Water level (start of test) _____ mbd

Water level (end of test) _____ mbd

Type of test (for example, bailer, step, constant rate)

_____

Pumping rate _____ m^3/hour D or litres/second D. Please tick as appropriate.

for days, _____ hours, mins

Recovery to _____ mbd in days, _____ hours, mins
(from end of pumping)

Date(s) of measurements Pump started (DD/MM/YYYY)

Pump stopped _____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flints	6.50	6.50
	Hard fractured chalk and flint	5.10	11.60

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

Borehole record

Nicholls Boreholes

British Geological Survey

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003) Soakaway 2

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ 33450 57112 Please attach site plan

Ground level (if known) metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 5-5-16 (DD/MM/YYYY) Completed 5-5-16 (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter	250	mm from	G/L	to 12.6	m/depth
		mm from		to	m/depth
		mm from		to	m/depth
		mm from		to	m/depth
Casing material PLASTIC SOLID and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.	diameter 165	mm from	G/L	to 6.6	m/depth
Casing material PLASTIC SLOTTED	diameter 165	mm from	6.6	to 12.6	m/depth
Casing material	diameter	mm from		to	m/depth
Casing material	diameter	mm from		to	m/depth
Grouting details 20 Bags Shingle. 6 Bags Mikolit					

Water struck at 1. m (depth below datum - mbd) 2. m (mbd)

3. m (mbd) 4. m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum m. Please tick if this is above D or below D ground level.
(if different from borehole datum)

Pump suction depth mbd

Water level (start of test) mbd

Water level (end of test) mbd

Type of test (for example, bailer, step, constant rate)

Pumping rate m^3/hour D or litres/second D. Please tick as appropriate.

for days, hours, mins

Recovery to mbd in days, hours, mins
(from end of pumping)

Date(s) of measurements Pump started (DD/MM/YYYY)

Pump stopped (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flints	6.50	6.50
	Hard fractured chalk and flint	6.10	12.60

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flints	6.00	6.00
	Putty chalk	1.10	7.10
	Hard fractured chalk and flint	2.50	9.60

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

WR38: Borehole record form

7935 NW37

Borehole record

Nichols Boreholes

British Geological Survey

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003) Soakaway 3

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33487 57110 Please attach site plan

Ground level (if known) metres Above Ordnance Datum

Drilling company Nichells Boreholes

Date drilling commenced 6-05-16 (DD/MM/YYYY) Completed 6-05-16 (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter	250	mm from	G/L	to	9.6 m/depth
		mm from		to	m/depth
		mm from		to	m/depth
		mm from		to	m/depth
Casing material and type (for example, if plain steel, plastic slotted). Please record permanent casing details. not temporary casing. PLASTIC SOLID	diameter	165mm	mm from	G/L	to 3.6 m/depth
Casing material PLASTIC SLOTTED	diameter	165	mm from	3.6	to 9.6 m/depth
Casing material	diameter		mm from		to m/depth
Casing material	diameter		mm from		to m/depth
Grouting details 20 Bags Shingle, 4 Bags Mikolit					

Water struck at 1. m (depth below datum - mbd) 2. m (mbd)
3. m (mbd) 4. m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) m. Please tick if this is above D or below D ground level.

Pump suction depth mbd

Water level (start of test) mbd

Water level (end of test) mbd

Type of test (for example, bailer, step, constant rate)

Pumping rate m³/hour D or litres/second D. Please tick as appropriate.

for days, hours, mins

Recovery to mbd in days, hours, mins
(from end of pumping)

Date(s) of measurements Pump started (DD/MM/YYYY)

Pump stopped (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

Borehole record

Nicholls Boreholes

British Geological Survey

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003) Scotland No 4

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33442 57112 Please attach site plan

Ground level (if known) ____ metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 9-05-16 (DD/MM/YYYY) Completed 9-05-16 (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) ____ metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter

250	mm from	G/L	to	10 m/depth
	mm from		to	m/depth
	mm from		to	m/depth
	mm from		to	m/depth

Casing material PLASTIC SOLID diameter 165 mm from G/L to 5 m/depth
and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material PLASTIC SLOTTED diameter 165 mm from 5 to 10 m/depth

Casing material ____ diameter ____ mm from ____ to ____ m/depth

Casing material ____ diameter ____ mm from ____ to ____ m/depth

Grouting details 20 Bags SINGLE, 4 Bags MIXALIT

Water struck at 1. ____ m (depth below datum - mbd) 2. ____ m (mbd)

3. ____ m (mbd) 4. ____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) ____ m. Please tick if this is above D or below D ground level.

Pump suction depth ____ mbd

Water level (start of test) ____ mbd

Water level (end of test) ____ mbd

Type of test (for example, bailer, step, constant rate) ____

Pumping rate ____ m^3/hour D or litres/second D. Please tick as appropriate.

for ____ days, ____ hours, ____ mins

Recovery to ____ mbd in ____ days, ____ hours, ____ mins
(from end of pumping)

Date(s) of measurements Pump started ____ (DD/MM/YYYY)

Pump stopped ____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flints	6.00	6.00
	Putty chalk	1.20	7.20
	Hard fractured chalk and flint	2.80	10.00

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flint	5.80	5.80
	Hard fractured chalk with flint	5.20	11.00

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

WR38: Borehole record form

Borehole record

Nicholls Boreholes

British Geological Survey

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003) Soakaway 5

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33436 57125 Please attach site plan

Ground level (if known) _____ metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 10-05-16 (DD/MM/YYYY) Completed 10-05-16 (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) _____ metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter

250	mm from	G/L	to	11	m/depth
	mm from		to		m/depth
	mm from		to		m/depth
	mm from		to		m/depth

Casing material and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material	PLASTIC SOLID	diameter	165	mm from	G/L	to 5.5 m/depth
Casing material	PLASTIC SLOTTED	diameter	165	mm from	5.5	to 11 m/depth
Casing material		diameter		mm from		to m/depth
Casing material		diameter		mm from		to m/depth

Grouting details 20 BAGS SHINGLE, 5 BAGS MIKOLIT

Water struck at 1. _____ m (depth below datum - mbd) 2. _____ m (mbd)

3. _____ m (mbd) 4. _____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) _____ m. Please tick if this is above D or below D ground level.

Pump suction depth _____ mbd

Water level (start of test) _____ mbd

Water level (end of test) _____ mbd

Type of test (for example, bailer, step, constant rate)

_____

Pumping rate _____ m^3/hour D or litres/second D. Please tick as appropriate.

for _____ days, _____ hours, _____ mins

Recovery to _____ mbd in _____ days, _____ hours, _____ mins
(from end of pumping)

Date(s) of measurements Pump started _____ (DD/MM/YYYY)

Pump stopped _____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

Borehole record

Nicholls Boreholes

British Geological Survey

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003)

Soakaway 7

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33416 57132 Please attach site plan

Ground level (if known) ____ metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 11-05-16 (DD/MM/YYYY) Completed 11-05-16. (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) N/A metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter

250 mm from G/L to 10 m/depth
____ mm from ____ to ____ m/depth
____ mm from ____ to ____ m/depth
____ mm from ____ to ____ m/depth

Casing material and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material PLASTIC SOLID diameter 165 mm from G/L to 4 m/depth
Casing material PLASTIC SLOTTED diameter 165 mm from 4 to 10 m/depth
Casing material ____ diameter ____ mm from ____ to ____ m/depth
Casing material ____ diameter ____ mm from ____ to ____ m/depth

Grouting details 20 Bags SHINGLE, 5 Bags MIKALIT

Water struck at 1. ____ m (depth below datum - mbd) 2. ____ m (mbd)
3. ____ m (mbd) 4. ____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) ____ m. Please tick if this is above D or below D ground level.

Pump suction depth ____ mbd

Water level (start of test) ____ mbd

Water level (end of test) ____ mbd

Type of test (for example, bailer, step, constant rate) ____

Pumping rate ____ m^3/hour D or litres/second D. Please tick as appropriate.

for ____ days, ____ hours, ____ mins

Recovery to ____ mbd in ____ days, ____ hours, ____ mins
(from end of pumping)

Date(s) of measurements Pump started ____ (DD/MM/YYYY)
Pump stopped ____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flints	6.00	6.00
	Hard fractured chalk and flint	4.00	10.00

(continue on separate page if necessary)

Other comments (for example, gas encountered, saline water intercepted)

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

D Strata log

Geological classification (BGS only)	Description of strata	Thickness m	Depth (to base of strata) m
	Dark brown clay with large flint	9.60	9.60
	Hard fractured chalk and flint	0.80	10.40
	(continue on separate page if necessary)		
	Other comments (for example, gas encountered, saline water intercepted)		

E Completing this form

How long did it take you to fill in this form? _____

For Official use only

Date received (DD/MM/YYYY)	File	Consent number	BGS reference number
Accession number	Wellmaster number	SOBI number	NGR
LIC NO	Purpose		EA reference number
Copy number	Entered by		

Borehole record

Nicholls Boreholes

British Geological Survey — Natural Environment Research Council

Environment Agency

Water Resources Act 1991 (as amended by the Water Act 2003)

Scarlaway 8

A Site details

Borehole drilled for Kevin Goddard

Location 186 Whyteleafe Road, Caterham, CR3 5ED

NGR (ten digits) TQ33381 57125 Please attach site plan

Ground level (if known) _____ metres Above Ordnance Datum

Drilling company Nicholls Boreholes

Date drilling commenced 12-05-16 (DD/MM/YYYY) Completed 12-05-16. (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) _____ metres (m). Please tick if this is above D or below D ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter

250	mm from	G/L	to	10.4 m/depth
_____	mm from	_____	to	_____ m/depth
_____	mm from	_____	to	_____ m/depth
_____	mm from	_____	to	_____ m/depth

Casing material PLASTIC SOLID diameter 165 mm from G/L to 4.4 m/depth
and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material PLASTIC SLOTTED diameter 165 mm from 4.4 to 10.4 m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Grouting details 20 Bags Shingle. 5 Bags Milkolit

Water struckat 1. _____ m (depth below datum - mbd) 2. _____ m (mbd)

3. _____ m (mbd) 4. _____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum (if different from borehole datum) _____ m. Please tick if this is above D or below D ground level.

Pump suction depth _____ mbd

Water level (start of test) _____ mbd

Water level (end of test) _____ mbd

Type of test (for example, bailer, step, constant rate)

_____

Pumping rate _____ m^3/hour D or litres/second D. Please tick as appropriate.

for _____ days, _____ hours, _____ mins

Recovery to _____ mbd in _____ days, _____ hours, _____ mins
(from end of pumping)

Date(s) of measurements Pump started _____ (DD/MM/YYYY)

Pump stopped _____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box D

APPENDIX F

CGL Risk Assessment Methodology

CGL Risk Assessment Methodology

The following risk Assessment methodology is based on CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice[1], in order to quantify potential risk via risk estimation and risk evaluation, which can be adopted at the Phase I stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and therefore is a qualitative approach and is undertaken for each potential pollution linkage (source-pathway-receptor) identified for the site in accordance with Land Condition Risk Management[3].

The methodology requires the classification of:

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

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

Table 1. Classifications of Consequence ratings

Classification	*Definition of Consequence*	*Examples*
Severe	Short-term (acute) risks to human health.	High concentration of cyanide on the surface of an informal recreation area
	Short-term (acute) risk of pollution of sensitive water resource or ecosystem.	Major spillage of contaminants from site into controlled waters
	Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils.	Explosion causing building collapse
Medium	Long-term (chronic) risks to human health	Concentrations of a contaminant from site exceeding the generic or site specific assessment criteria
	Long-term (chronic) pollution of sensitive water resource	Leaching of contaminants from a site into a major or minor aquifer
	Significant change in an ecosystem/contamination of off-site soils	Death of a species within a designated nature reserve
Mild	Pollution of non-sensitive water resource	Pollution of a non-classified groundwater
	Significant damage to crops/ buildings/property/infrastructure	Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
	Damage to an ecosystem or sensitive buildings/structures/services	
Minor	Easily preventable non-permanent health effects	Presence of contamination at concentrations which require the use of personal protective equipment during site work
	Harm, although not necessarily significant harm, which may result in financial loss or expenditure to resolve	Loss of plants in a landscaping scheme/discolouration of concrete
	Easily repairable effects of damage to buildings/structures/services	

[1] CIRIA, (2001). *Contaminated Land Risk Assessment. A Guide to Good Practice*. CIRIA C552.

[2] M.J. Carter Associates, (1995*). Prioritisation and Categorisation Procedure for Sites Which May Be Contaminated*. Contaminated Land Report 6. Department of the Environment. C

[3] Land Condition Risk Management - https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2 which are adapted from the CIRIA guidance[1]. It should be noted that where a pollutant linkage has not been identified the likelihood is considered to be zero.

Table 2. Classifications of probability ratings

Classification	*Definition*
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor that an event has occurred
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the short term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term

In accordance with C552 the risk classification for each pollution linkage are classified in accordance with the matrix for consequence and probability set out in Table 3. The definitions for the risk classifications are presented in Table 4.

Table 3. Risk classification matrix

		Consequence			
		Severe	***Medium***	***Mild***	***Minor***
Probability	**High likelihood**	Very High	High	Moderate	Moderate / Low
	Likely	High	Moderate	Moderate / Low	Low
	Low likelihood	Moderate	Moderate / Low	Low	Very Low
	Unlikely	Moderate / Low	Low	Very Low	Very Low

Table 4. Risk classification definitions

Classification	*Definition*
Very High	There is a high probability that severe harm could arise to a designated receptor from the identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from the identified hazard. Realisation of the risk is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
Moderate	It is possible that harm could arise to a designated receptor from the identified hazard. However, it is either relatively unlikely that such harm would be severe or if any harm were to occur it is more likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the potential risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from the identified hazard, but it is considered likely that this harm, if realised, would at worse normally be mild.
Very Low	There is a low possibility that harm could arise to a designated receptor from the identified hazard. In the event of such harm being realised it is not likely to be severe.

APPENDIX G

Borehole and Excavation Records

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**BH1**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	15.45	CP	Cable Percussion Borehole Rig			

Location Type: Cable percussion (shell and auger)

Coords: 533157.040E/157497.720N Level: 171.820m

Ordnance Survey Great Britain National Grid | Final Depth: **15.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 12/12/2022

CGL Part of the CTS Group

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					0.10	171.72	Concrete.		
					0.20	171.62	[CONCRETE]		
					0.50	171.32	Medium dense white subangular medium to coarse chalk gravel. [MADE GROUND]		
1.10 1.20 - 1.65	D 1 SPTLS 2	SPT(S) 1.20m N=12 (3,4/2,3,2,5) Recovery=100%					Soft to firm orangey brown CLAY with occasional angular to subrounded fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		1
2.00 2.00 - 2.20 2.00 - 2.50	D 3 U 4 B 5	Ublows=100 Recovery=0%					Firm to stiff red mottled brown CLAY with occasional angular to rounded fine to coarse flint gravel and rare partially decomposed organic matter. [CLAY-WITH-FLINTS FORMATION] *from 2.00 to 2.50m bgl - Occasional flint cobbles* *from 2.00 to 3.00m bgl - Clay becomes stiff*		2
3.00 3.00 - 3.45	D 6 SPTLS 7	SPT(S) 3.00m N=18 (1,2/3,4,4,7) Recovery=100%			3.00	168.82	Stiff to very stiff red brown CLAY with frequent angular to subangular fine to coarse flint gravel and occasional organic matter. [CLAY-WITH-FLINTS FORMATION] *from 3.45 to 4.00m bgl - Clay becomes soft*		3
4.00 4.00 - 4.45	D 8 SPTLS 9	SPT(S) 4.00m N=5 (1,1/1,1,1,2) Recovery=100%			4.00	167.82	Structureless CHALK composed of white slightly gravelly SILT. Gravel is low density, very weak, angular to subangular and fine to medium of white chalk. Localised dissolution of chalk reflected through occasional red-brown patches. (Grade Dm) [WHITE CHALK SUBGROUP] *4.00m bgl - Rare chalk inclusions as white clay*		4
5.00 5.00 - 5.45	D 10 SPTLS 11	SPT(S) 5.00m N=9 (1,1/2,2,2,3) Recovery=100%			5.00	166.82	Structureless CHALK composed of white slightly gravelly slightly sandy SILT. Sand is coarse. Gravel is low to medium density, weak, angular and fine to medium of white chalk. Localised dissolution of chalk reflected through occasional red inclusions. (Grade Dm) [WHITE CHALK SUBGROUP] *5.00m bgl - Subangular very high density, moderately strong chalk cobble*		5
6.00	D 12				6.00	165.82	Structureless CHALK composed of white gravelly SILT. Gravel is high density, moderately weak, angular to subangular and coarse of white chalk. Localised dissolution of chalk reflected through rare red inclusions. (Grade Dm) [WHITE CHALK SUBGROUP]		6
6.50 - 6.95	SPTLS 13	SPT(S) 6.50m N=28 (2,7/5,7,8,8) Recovery=100%			6.50	165.32	Structured CHALK recovered as white slightly gravelly SILT. Gravel is low density, very weak, angular and fine to medium of white chalk. Localised dissolution of chalk reflected through rare red inclusions. [WHITE CHALK SUBGROUP]		
7.00	D 14				7.00	164.82	Structured CHALK recovered as SILT with occasional gravel. Gravel is high density, moderately weak, subangular and fine to medium of white chalk. Localised dissolution of chalk reflected through rare red inclusions. [WHITE CHALK SUBGROUP]		7
8.00 8.00 - 8.45	D 15 SPTLS 16	SPT(S) 8.00m N=37 (3,9/14,8,8,7) Recovery=100%			8.00	163.82	Structured CHALK recovered as slightly sandy gravelly SILT. Gravel is high densitry, moderately weak, angular to subangular and coarse of white chalk. Sand is fine to coarse. Localised dissolution of chalk reflected through rare red inclusions. [WHITE CHALK SUBGROUP]		8
9.00	D 17				9.00	162.82	Structured CHALK recovered as gravelly SILT. Gravel is high to very high density, moderately weak to moderately strong, angular to subangular, fine to coarse of white chalk. Localised dissolution of chalk reflected through rare reddish brown inclusions. [WHITE CHALK SUBGROUP]		9
9.50 - 9.95	SPTLS 18	SPT(S) 9.50m N=19 (3,4/5,4,4,6) Recovery=100%			9.50	162.32	Structured CHALK recovered as SILT with rare gravel. Gravel is medium density, weak, angular to subangular, fine to coarse of white chalk. [WHITE CHALK SUBGROUP]		
10.00	D 19				10.00	161.82			10

Strata continues onto next page

Notes:

1. Position terminated at target depth of 15.45 mbgl
2. No groundwater encountered
3. Installation details: 0.00 to 4.00m 50mm plain pipe and 0.00 to 4.00m bentonite seal; 50mm slotted pipe and gravel filter from 4.00m to 15.00m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
15.00	150	9.00	150

Hammer Information	
Energy Ratio	Serial No.
64%	BHDS04

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	4.00	15.00

Scale: 1:50

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**BH1**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	15.45	CP	Cable Percussion Borehole Rig			

Location Type: Cable percussion (shell and auger)

Coords: 533157.040E/157497.720N Level: 171.820m

Ordnance Survey Great Britain National Grid

Final Depth: **15.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 12/12/2022

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Godalming,
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Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					11.00	160.82	Structured CHALK recovered as sandy SILT with rare medium to high density, weak to moderately weak, angular to subangular, medium to coarse gravel of white chalk. Sand is coarse. Rare angular, medium flint gravel. [WHITE CHALK SUBGROUP]		
11.00 - 11.45	D 20 SPTLS 21	SPT(S) 11.00m N=32 (4,7/7,7,8,10) Recovery=100%							
					12.00	159.82	Structured CHALK recovered as sandy SILT with rare gravel. Gravel is low density, very weak, angular to subangular, medium of white chalk. Sand is fine to coarse. Rare angular to subangular, fine to coarse flint gravel. [WHITE CHALK SUBGROUP]		
12.00	D 22								
					12.50	159.32	Structured CHALK recovered as gravelly SILT. Gravel is medium to high density, weak to moderately weak, subangular to subrounded and fine to coarse of white chalk. [WHITE CHALK SUBGROUP]		
12.50 - 12.90	SPTLS 23	SPT(S) 12.50m N=50 (7,16/50 for 245mm) Recovery=100%							
					13.00	158.82	Structured CHALK recovered as SILT with rare gravel. Gravel is high density, moderately weak, angular to subrounded and fine to medium of white chalk. [WHITE CHALK SUBGROUP]		
13.00	D 24								
					14.00	157.82	Structured CHALK recovered as slightly gravelly SILT. Gravel is very high density, moderately strong, subangular to subrounded and fine to coarse of white chalk. [WHITE CHALK SUBGROUP]		
14.00	D 25	SPT(S) 14.00m N=50 (5,7/10,15,13,12)							
14.00 - 14.45	SPTLS 26	Recovery=100%							
					15.00	156.82	Structured CHALK recovered as slightly gravelly slightly sandy SILT. Gravel is high to very high density, moderately weak to moderately strong, angular to subangular and fine to medium of white chalk. Sand is fine to coarse. Frequent black angular, fine to medium flint gravel. Rare subrounded chalk cobbles. [WHITE CHALK SUBGROUP]		
15.00	D 27	SPT(S) 15.00m N=23 (2,3/4,5,5,9)							
15.00 - 15.45	SPTLS 28	Recovery=100%							
					15.45	156.37	Structured CHALK recovered as white slightly gravelly SILT. Gravel is low density, very weak, angular to subangular and fine to medium of white chalk. Localised dissolution of chalk reflected through red-brown patches. [WHITE CHALK SUBGROUP]		
							EOH at 15.45m - Achieved target depth		

Notes:

1. Position terminated at target depth of 15.45 mbgl
2. No groundwater encountered
3. Installation details: 0.00 to 4.00m 50mm plain pipe and 0.00 to 4.00m bentonite seal; 50mm slotted pipe and gravel filter from 4.00m to 15.00m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
15.00	150	9.00	150

Hammer Information	
Energy Ratio	Serial No.
64%	BHDS04

Install Response Zones		
Ref	From (m)	To (m)

Scale: 1:50

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Status: **FINAL**

Location ID: **TP1**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	4.00	TP	Wheeled Hydraulic Excavator

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Trial pit/trench

Coords: 533157.830E/157175.340N Level: 176.150m

Ordnance Survey Great Britain National Grid

Final Depth: **4.00 m**

Orientation: 70° Inclination: °

Date Start: 07/12/2022 Date End: 07/12/2022

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Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
0.20	ES 1				0.35	175.80	Grass over dark brown sandy clay with frequent angular to subangular fine to coarse gravel of flint. Sand is fine to medium. Rootlets common. [TOPSOIL]		
0.50	ES 2	HSV 0.50m (p)= 63 kPa			1.40	174.75	Soft to firm orangey brown CLAY with frequent angular fine to coarse flint gravel and rare flint cobbles. [CLAY-WITH-FLINTS FORMATION]		
1.60 1.60	B 1 D 1	HSV 1.60m (p)= 75 kPa			1.80	174.35	Firm to stiff red mottled orangey brown CLAY with occasional angular to subrounded fine to medium flint gravel. [CLAY-WITH-FLINTS FORMATION] *1.60m bgl - Becoming increasingly red with depth*		
3.00 3.00	B 2 D 2				4.00	172.15	Soft to firm slightly sandy slightly silty CLAY with occasional angular to subrounded fine to medium flint gravel. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION] *1.80m bgl - Occasional flint cobbles*		
							EOH at 4.00m - Achieved target depth		

Notes:

1. Position terminated at target depth of 4.0mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.30	0.65

Scale: 1:25

Logged By: ADB

Checked By: HJG

Approved By: RNS

Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey				Status:		Location ID		CGL Part of the CTS Group
Client: Daniel Watney LLP				**FINAL**		**TP10**		Card Geotechnics Limited, 4 Godalming Business Centre, Woolsack Way, Godalming, Surrey, GU7 1XW www.cgl-uk.com
Method and Plant Used				Groundwater			Location Type: Trial pit/trench	
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To	Coords: 533082.400E/157410.540N	Level: 172.310m
0.00	3.70	TP	Wheeled Hydraulic Excavator				Ordnance Survey Great Britain National Grid	Final Depth: **3.70 m**
							Orientation: 160°	Inclination: °
							Date Start: 06/12/2022	Date End: 06/12/2022

Sheet 1 of 1

Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					0.10	172.21	Asphalt overlying concrete. [CONCRETE]		
					0.35	171.96	Light grey subangular and coarse chalk gravel with occasional angular to subangular medium to coarse gravel of flint and cobbles of chalk. [MADE GROUND]		
0.40	ES 1				0.45	171.86	*from 0.15 to 0.35m bgl - Chalk very compacted/cemented*		
							Dark brown clay with frequent angular to subangular fine to coarse gravel of brick and flint. [MADE GROUND]		
							from 0.35 to 0.45m bgl - Brick red fine sandy patches		
							Soft dark brown CLAY with frequent angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		
1.00 1.00	D 1 ES 2	HSV 1.00m (p)= 53 kPa							1
					1.60	170.71	Stiff red mottled brown CLAY with frequent angular to subrounded fine to coarse flint gravel. Occasional flint cobbles. [CLAY-WITH-FLINTS FORMATION]		
							1.60m bgl - Clay becoming increasingly red in colour		2
2.30 2.30	B 1 D 2	HSV 2.30m (p)= 53 kPa					*2.30m bgl - Frequent flint cobbles*		3
					3.70	168.61	EOH at 3.70m - Achieved target depth		4
									5

Notes:

1. Position terminated at target depth of 3.7mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations.

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.50	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**TP11**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	4.00	TP	Wheeled Hydraulic Excavator			

Location Type: Trial pit/trench

Coords: 533134.980E/157361.700N Level: 172.740m

Ordnance Survey Great Britain National Grid

Final Depth: **4.00 m**

Orientation: 70° Inclination: °

Date Start: 07/12/2022 Date End: 07/12/2022

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Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
0.10	ES 1				0.25	172.49	Light brown gravelly sand. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint. Rare flint cobbles and oil staining. [MADE GROUND]		
0.30 0.30	D 1 ES 2				0.50	172.24	White subangular coarse chalk gravel recovered as clayey gravel. Gravel is angular, fine to coarse of chalk. [MADE GROUND]		
0.50 0.50	D 2 ES 3	HSV 0.50m (p)= 76 kPa					Stiff orange mottled red slightly sandy slightly silty CLAY with occasional angular, fine to coarse flint. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION] *0.50m bgl - Occasional yellow and black streaks. Lithology becoming more red with depth.* *1.00m bgl - Rare to occasional flint cobbles*		1
2.00	B 1								2
					4.00	168.74	EOH at 4.00m - Achieved target depth		3
									4
									5

Notes:

1. Position terminated at target depth of 4.0mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.40	0.59

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey				Status: **FINAL**	Location ID **TP12**	CGL Part of the CTS Group
Client: Daniel Watney LLP				Location Type: Trial pit/trench		Card Geotechnics Limited, 4 Godalming Business Centre, Woolsack Way, Godalming, Surrey, GU7 1XW www.cgl-uk.com
Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.70	TP	Wheeled Hydraulic Excavator			
Coords: 533139.420E/157245.870N Level: 173.020m						
Ordnance Survey Great Britain National Grid				Final Depth: **3.70 m**		
Orientation: 160° Inclination: °						
Date Start: 07/12/2022 Date End: 07/12/2022						Sheet 1 of 1

Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
0.30 0.30 0.30	B 1 ES 1 ES ES1				0.60	172.42	Grass over dark brown sandy clay. Sand is fine to medium. Frequent angular to subangular fine to coarse gravel of brick and flint. Rare concrete and brick cobbles as well as insulated plastic piping. Rootlets common. [MADE GROUND]		
1.50 1.50	D 1 ES 2	HSV 1.50m (p)= 60 kPa					Firm to stiff orangey brown mottled red CLAY with occasional angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION] *from 1.50 to 3.30m bgl - Occasional flint cobbles* *1.80m bgl - Rare to occasional dark grey clay patches*		1 2
3.50 3.50	B 2 D 2				3.30 3.70	169.72 169.32	CHALK composed of white silty GRAVEL. Gravel is low to medium density, very weak to weak, subangular to angular and medium to coarse of white chalk. Rare chalk cobbles. [WHITE CHALK SUBGROUP]		3
							EOH at 3.70m - Achieved target depth		4 5

Notes:

1. Position terminated at target depth of 3.7mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.90	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	4.00	TP	Wheeled Hydraulic Excavator			

Status: **FINAL**

Location ID: **TP2**

Location Type: Trial pit/trench

Coords: 533247.010E/157150.680N Level: 173.740m

Ordnance Survey Great Britain National Grid

Final Depth: **4.00 m**

Orientation: 70° Inclination: °

Date Start: 07/12/2022 Date End: 07/12/2022

CGL Part of the CTS Group

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Godalming,
Surrey,
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Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
0.20	ES 1				0.40	173.34	Grass over dark brown sandy gravelly clay. Gravel angular to subangular, fine to coarse of brick, concrete and chalk. Sand is fine to coarse. [MADE GROUND]		
0.50	D 1	HSV 0.50m (p)= 64 kPa			0.50	173.24	Firm to stiff dark brown clay with occasional angular to subangular, fine to coarse gravel of brick, flint and terracotta tiling. [MADE GROUND]		
0.50	ES 2						Firm to stiff dark brown CLAY. [CLAY-WITH-FLINTS FORMATION]		
					1.10	172.64	Stiff orangey brown slightly gravelly slightly sandy CLAY. Sand fine to coarse. Gravel angular to subrounded, fine to coarse of flint. [CLAY-WITH-FLINTS FORMATION]		
2.90	B 1						*3.70m bgl - Occasional flint cobbles*		
2.90	D 2				4.00	169.74			
							EOH at 4.00m - Achieved target depth		

Notes:

1. Position terminated at target depth of 4.0mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.80	0.55

Scale: 1:25

Logged By: ADB

Checked By: HJG

Approved By: RNS

Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey				Status:	Location ID	
Client: Daniel Watney LLP				**FINAL**	**TP3**	
Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.20	TP	Wheeled Hydraulic Excavator			

Location Type: Trial pit/trench

Coords: 533250.860E/157192.930N Level: 172.880m

Ordnance Survey Great Britain National Grid

Final Depth: **3.20 m**

Orientation: 70° Inclination: °

Date Start: 07/12/2022 Date End: 07/12/2022

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Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
0.20	ES 1				0.30	172.58	Grass over dark brown sandy silt. Sand is fine to coarse. Occasional angular coarse gravel to cobble sized concrete. Frequent to occasional angular coarse flint gravel. Rootlets common. [MADE GROUND]		
0.40 0.40	D 1 ES 2						Stiff orangey brown mottled red slightly sandy slightly silty CLAY with occasional rounded fine to coarse flint gravel and rare partially decomposed organic matter. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION]		
1.40	B 1	HSV 1.40m (p)= 61 kPa							
2.10 2.10	B 2 D 2						*2.10m bgl - Flint cobbles*		
					3.20	169.68			
							EOH at 3.20m - Terminated due to obstruction		

Notes:

1. Position terminated at target depth of 3.2mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.10	0.54

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey		Status: **FINAL**	Location ID **TP4**
Client: Daniel Watney LLP			
Location Type: Trial pit/trench			
Coords: 533185.540E/157227.400N	Level: 172.760m		
Ordnance Survey Great Britain National Grid	Final Depth: **3.50 m**		
Orientation: 0°	Inclination: °		
Date Start: 07/12/2022	Date End: 07/12/2022		

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Sheet 1 of 1

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	3.50	TP	Wheeled Hydraulic Excavator

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
0.20	ES 1				0.30	172.46	Grass over dark brown clayey gravelly sand. Sand fine to coarse. Gravel angular to subangular, fine to coarse of brick and flint. Rare brick cobbles. Rootlets common. [MADE GROUND]		
					0.50	172.26	Medium dense white subangular medium to coarse gravel of chalk. [MADE GROUND]		
2.30 2.30 2.30	B 1 D 1 ES 2	HSV 2.30m (p)= 30 kPa					Firm brown mottled orange and grey CLAY with occasional red veining. [CLAY-WITH-FLINTS FORMATION] *3.00m bgl - Slightly sandy*		
					3.50	169.26	EOH at 3.50m - Achieved target depth		

Notes:

1. Position terminated at target depth of 3.5mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.60	0.60

Scale: 1:25

Logged By:	ADB
Checked By:	HJG
Approved By:	RNS
Section ID:	

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**TP5**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.50	TP	Wheeled Hydraulic Excavator			

Location Type: Trial pit/trench

Coords: 533227.210E/157397.080N Level: 172.120m

Ordnance Survey Great Britain National Grid

Final Depth: **3.50 m**

Orientation: 70° Inclination: °

Date Start: 06/12/2022 Date End: 06/12/2022

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Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					0.20	171.92	Grass over dark brown clay with rare angular and coarse brick gravel. [MADE GROUND]		
0.20	ES 1						Stiff to very stiff orangey brown mottled red CLAY with occasional angular to subrounded fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		
1.00	D 1	HSV 1.00m (p)= 51 kPa					*1.00m bgl - Becoming more orangey red with frequent flint cobbles*		1
					1.50	170.62	Stiff brown mottled red and orange CLAY. [CLAY-WITH-FLINTS FORMATION] *1.50m bgl - Occasional chalk cobbles*		
2.90	B 1				2.90	169.22			2
2.90	D 2						CHALK composed of silty GRAVEL. Gravel is low density, very weak, subangular, fine to coarse of white chalk. Frequent cobbles of chalk. [WHITE CHALK SUBGROUP]		
2.90	ES 2								3
					3.50	168.62	EOH at 3.50m - Achieved target depth		
									4
									5

Notes:

1. Position terminated at target depth of 3.5mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.40	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey		Status: **FINAL**	Location ID **TP6**
Client: Daniel Watney LLP			
Location Type: Trial pit/trench			
Coords: 533243.150E/157238.830N	Level: 172.170m		
Ordnance Survey Great Britain National Grid	Final Depth: **3.50 m**		
Orientation: 160°	Inclination: °		
Date Start: 06/12/2022	Date End: 06/12/2022		

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	3.50	TP	Wheeled Hydraulic Excavator

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
0.20	ES 1				0.20	171.97	Grass over dark brown sandy silt with occasional angular fine to coarse gravel of roof tile fragments, brick and concrete. Sand is fine to coarse. Rootlets common. [MADE GROUND]		
					0.50	171.67	White chalk gravel. Gravel subangular and coarse with occasional chalk cobbles. [MADE GROUND]		
0.60	B 1				1.00	171.17	Soft dark brown slightly clayey slightly sandy SILT. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION]		
1.80 1.80	D 1 ES 2	HSV 1.80m (p)= 51 kPa			3.50	168.67	Stiff orange mottled red CLAY with frequent angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION] *1.70m bgl - Occasional flint cobbles*		
							EOH at 3.50m - Achieved target depth		

Notes:

1. Position terminated at target depth of 3.5mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.40	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey		Status: **FINAL**	Location ID **TP7**
Client: Daniel Watney LLP			
Method and Plant Used		Groundwater	
From (m) / To (m) / Type / Plant Used		Strike (m) / Time (min) / Rose To	
0.00 / 3.10 / TP / Wheeled Hydraulic Excavator			
Location Type: Trial pit/trench			
Coords: 533134.650E/157469.400N	Level: 171.780m		
Ordnance Survey Great Britain National Grid	Final Depth: **3.10 m**		
Orientation: 0°	Inclination: °		
Date Start: 06/12/2022	Date End: 06/12/2022		

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
					0.10	171.68	Turf over concrete. [CONCRETE]		
					0.30	171.48	White subangular to subrounded coarse chalk gravel. [MADE GROUND]		
					0.65	171.13	Soft dark brown CLAY with frequent angular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		
0.65 0.65	D 1 ES 1						Firm to stiff red mottled brown CLAY with occasional angular to subrounded fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		1
1.50 1.50	B 1 D 2	HSV 1.50m (p)= 66 kPa					*1.50m bgl - Becoming more red in colour*		2
					3.10	168.68	*3.00m bgl - Dense flint bed*		3
							EOH at 3.10m - Terminated due to refusal		4
									5

Notes:

1. Position terminated at depth of 3.1mbgl due to refusal on flint bed
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests

Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring	Length (m)	Width (m)
Stable	None	2.60	0.60

Scale: 1:25

Logged By:	ADB
Checked By:	HJG
Approved By:	RNS
Section ID:	

CGL Reference
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Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**TP8**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.50	TP	Wheeled Hydraulic Excavator			

Location Type: Trial pit/trench

Coords: 533158.660E/157449.890N Level: 171.820m

Ordnance Survey Great Britain National Grid

Final Depth: **3.50 m**

Orientation: 70° Inclination: °

Date Start: 06/12/2022 Date End: 06/12/2022

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Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					0.10	171.72	Turf over concrete. [CONCRETE]		
0.20	B 1	HSV 0.20m (p)= 115 kPa			0.20	171.62	White subangular to subrounded medium to coarse gravel of chalk recovered as slightly clayey gravel. Gravel angular, fine to coarse of chalk. [MADE GROUND]		
0.30	D 1								
0.30	ES 1						Soft to firm dark brown CLAY with frequent angular to subangular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		
0.70	B 2				0.70	171.12			
0.70	D 2						Firm to stiff red mottled brown slightly sandy silty CLAY with occasional angular to subrounded fine to coarse flint gravel. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION]		
0.70	ES 2								
							1.50m bgl - Increasingly red in colour		
							1.90m bgl - Frequent flint cobbles		
		HSV 2.90m (p)= 70 kPa							
					3.50	168.32			
							EOH at 3.50m - Achieved target depth		

Notes:

1. Position terminated at target depth of 3.5mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.40	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey		Status: **FINAL**	Location ID **TP9**
Client: Daniel Watney LLP			
Location Type: Trial pit/trench			
Coords: 533091.100E/157429.860N	Level: 172.300m		
Ordnance Survey Great Britain National Grid	Final Depth: **3.50 m**		
Orientation: 160°	Inclination: °		
Date Start: 06/12/2022	Date End: 06/12/2022		

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Sheet 1 of 1

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.50	TP	Wheeled Hydraulic Excavator			

Samples & Tests			Water Level (m)	Legend	Strata Depth (m)	Level (m)	Strata Description	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results							
					0.10	172.20	Asphalt overlying concrete. [CONCRETE]		
0.20	ES 1						White subrounded to subangular coarse gravel of chalk recovered as slightly sandy gravel. Sand is fine to coarse. [MADE GROUND]		
0.40	ES 2				0.40	171.90			
							Soft dark brown slightly sandy CLAY. Sand is fine to medium. Frequent white and brown angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]		
0.60	D 2				0.80	171.50			
							Stiff red mottled brown CLAY with occasional angular fine flint gravel. [CLAY-WITH-FLINTS FORMATION]		
1.10	D 1	HSV 1.10m (p)= 65 kPa							1
							2.10m bgl - Frequent flint cobbles and boulders		2
3.20	B 1								3
					3.50	168.80	EOH at 3.50m - Achieved target depth		4
									5

Notes:

1. Position terminated at depth of 3.5mbgl
2. No groundwater encountered
3. Trial pit backfilled with arisings upon completion
4. Consistencies and densities based on Engineer's observations.

Soakaway Tests			
Test No.	Date	Duration (hh:mm)	Infiltration Rate

Pit Details			
Stability	Shoring	Length (m)	Width (m)
Stable	None	2.60	0.60

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS

Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Status: **FINAL**

Location ID: **WS1**

Location Type: Window Sampler

Coords: 533160.620E/157215.140N Level: 172.710m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					0.30	172.41	Grass over dark brown silt with occasional angular to subangular fine to coarse flint gravel. [TOPSOIL]					
							Soft dark brown CLAY with occasional angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
1.00	ES 1											1
		SPT(S) 1.20m N=6 (0,0/1,1,2,2)										
		HSV 1.30m (p)= 54 kPa										
1.45	EW 1											
1.50	D 1				1.60	171.11						
							Firm light brown slightly sandy CLAY. Sand is fine. [CLAY-WITH-FLINTS FORMATION]					
		HSV 1.80m (p)= 46 kPa										
		SPT(S) 2.00m N=12 (1,2/1,4,4,3)										2
2.40	D 2				2.40	170.31						
							Stiff red mottled brown CLAY with occasional yellow streaks and rare organic matter. [CLAY-WITH-FLINTS FORMATION]					
		HSV 2.80m (p)= 65 kPa										
		SPT(S) 3.00m N=10 (1,2/2,3,3,2)					*from 3.00 to 5.00m bgl - Clay becoming increasingly red*					3
		HSV 3.20m (p)= 51 kPa										
3.40	D 3											
		SPT(S) 4.00m N=18 (1,3/3,4,5,6)										4
4.50	D 4											
		SPT(S) 5.00m N=11 (1,2/2,3,2,4)										5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter

Depth (m)	Diam (mm)
2.00	102
3.00	87
4.00	75

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS1**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533160.620E/157215.140N Level: 172.710m

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Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	167.26	Stiff red mottled brown CLAY with occasional yellow streaks and rare organic matter. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

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Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS10**

Location Type: Window Sampler

Coords: 533106.740E/157307.800N Level: 173.240m

Ordnance Survey Great Britain National Grid — Final Depth: **3.50 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	3.50	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					0.05	173.19	Dark brown silt with rare angular fine to coarse gravel of brick. [MADE GROUND]					
0.40	ES 1				0.50	172.74	Light brown clay with occasional angular to subrounded fine to coarse gravel of flint and chalk. [MADE GROUND]					
		SPT(S) 1.20m N=10 (1,1/3,2,2,3)					Firm to stiff red mottled brown CLAY with occasional angular to subrounded flint gravel and yellow streaks. [CLAY-WITH-FLINTS FORMATION]					
1.50	D 1	HSV 1.60m (p)= 71 kPa										
		SPT(C) 2.00m N=15 (1,2/4,4,3,3,4)										
2.50	D 2											
		SPT(C) 3.00m 50 (5,9/50 for 150mm)										
					3.50	169.74	EOH at 3.50m - Terminated due to refusal					

Notes:

1. Position terminated at depth of 3.5 mbgl due to refusal on flint bed
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter

Depth (m)	Diam (mm)
2.00	102
3.00	87

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
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Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS11**

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	5.00	WS	Tracked Windowless Sampler Rig			

Location Type: Window Sampler

Coords: 533253.000E/157229.000N Level: 172.300m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling			Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						WS Run	Diam (mm)	Recovery (%)		
					0.20	172.10	Grass over dark brown sandy silt with angular to subangular fine to coarse gravel of brick and concrete. Sand is fine. [MADE GROUND]					
0.20	ES 1	PID 0.20m 0.40 ppm			0.30	172.00	White subangular fine to coarse chalk gravel. [MADE GROUND]					
							Soft dark brown CLAY with occasional angular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
1.20	ES 2	SPT(S) 1.20m N=7 (1,1/1,2,2,2)			1.20	171.10	Stiff red mottled brown slightly silty CLAY with occasional angular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
		HSV 1.40m (p)= 88 kPa										
1.50	D 1											
		SPT(S) 2.00m N=16 (2,4/3,5,4,4)										
		PID 2.40m 0.50 ppm					*from 2.40 to 5.00m bgl - Colour changes to dark brown with finely laminated organic matter.*					
2.50	D 2											
		HSV 2.90m (p)= 73 kPa										
		SPT(S) 3.00m N=25 (4,6/4,9,4,8)					*from 3.10 to 5.00m bgl - Frequent flint, angular to subangular, medium to coarse.*					
3.50	D 3											
		SPT(S) 4.00m N=10 (4,4/4,2,2,2)										
4.50	D 5											
		SPT(S) 5.00m N=9 (1,1/1,2,3,3)			5.00	167.30						

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	102		
3.00	87		
4.00	75		

Hammer Information	
Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones		
Ref	From (m)	To (m)

Scale: 1:25

Logged By:	ADB
Checked By:	HJG
Approved By:	RNS
Section ID:	

CGL Reference
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Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS11**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533253.000E/157229.000N Level: 172.300m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	166.85	CHALK recovered in final SPT. Insufficient sample size for chalk description or to determine chalk grade. [WHITE CHALK SUBGROUP]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
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Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Status:	Location ID
FINAL	**WS2**

Location Type: Window Sampler

Coords: 533203.710E/157208.380N Level: 173.040m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling WS Run	Window Sampling Diam (mm)	Window Sampling Recovery (%)	Inst/ Backfill	Depth (m)
0.10	ES 1				0.10	172.94	Grass over black sandy silt with occasional angular, fine to coarse gravel of brick and chalk. Sand is fine to coarse. [MADE GROUND]					
0.20	ES 2				0.25	172.79	White subangular medium to coarse chalk gravel. [MADE GROUND]					
0.90	ES 3						Dark brown clay with rare fine gravel sized chalk. Rare angular coarse roof tile gravel. [MADE GROUND]					
		SPT(S) 1.20m N=10 (1,1/3,2,2,3)			1.20	171.84						1
1.50	D 1						Firm to stiff light orangey brown CLAY with rare partially decomposed organic matter and rare subrounded coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
2.00	D 2	SPT(S) 2.00m N=8 (1,1/2,2,2,2)										2
2.50	D 3											
2.70 - 3.60	B 1	HSV 2.70m (p)= 32 kPa			2.70	170.34						
		SPT(S) 3.00m N=9 (1,2/2,2,3,2)					Firm to stiff orangey brown slightly sandy CLAY. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION]					3
		HSV 3.20m (p)= 21 kPa										
3.40	D 4											
					3.60	169.44	Stiff to very stiff red CLAY with occasional angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION] *from 3.60 to 4.00m bgl - Abundant flint gravel. Flint subangular to subrounded and coarse.*					
		SPT(S) 4.00m N=18 (4,5/6,4,4,4)										4
		SPT(S) 5.00m N=17 (1,2/3,3,5,6)										5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter

Depth (m)	Diam (mm)
2.00	102
3.00	87
4.00	75

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS2**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533203.710E/157208.380N Level: 173.040m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	167.59	Stiff to very stiff red CLAY with occasional angular to subangular fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones: Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS3**

Location Type: Window Sampler

Coords: 533229.680E/157172.930N Level: 173.510m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	5.00	WS	Tracked Windowless Sampler Rig			

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling WS Run	Window Sampling Diam (mm)	Window Sampling Recovery (%)	Inst/ Backfill	Depth (m)
		PID 0.20m 0.00 ppm					Grass over dark brown slightly sandy clayey silt with occasional angular to subrounded, fine to coarse gravel of concrete, chalk, brick and asphalt. Sand is fine to coarse. [MADE GROUND]					
0.30	ES 1				0.45	173.06						
							Light brown clay with occasional angular, fine to coarse flint gravel and rare coarse gravel sized rooftiles. [MADE GROUND]					
		SPT(S) 1.20m N=8 (1,1/1,3,2,2) PID 1.20m 0.10 ppm			1.20	172.31						1
		HSV 1.40m (p)= 65 kPa					Stiff red mottled brown CLAY with occasional angular, coarse flint gravel and yellow streaks. [CLAY-WITH-FLINTS FORMATION]					
1.50	D 1						*1.20m bgl - 1cm organic rich sand at 1.2m. Sand is medium to coarse.*					
		HSV 1.90m (p)= 64 kPa										
2.00	D 2	SPT(S) 2.00m N=20 (2,4/2,5,5,8)					*from 2.00 to 3.00m bgl - Colouration gradually transitions from red to brown*					2
2.50	D 3	HSV 2.50m (p)= 64 kPa					*from 2.50 to 2.70m bgl - Sandy Clay interval. Sand is fine.*					
2.90	ES 2											
		SPT(S) 3.00m N=18 (2,5/3,3,4,8)					*from 3.00 to 5.00m bgl - Finely laminated partially decomposed organic matter.*					3
3.50	D 4											
		HSV 3.60m (p)= 66 kPa										
		PID 3.90m 0.90 ppm										
		SPT(S) 4.00m N=40 (2,3/5,13,15,7)					*from 4.00 to 5.00m bgl - Poor Recovery.*					4
		SPT(S) 5.00m N=12 (1,2/2,4,3,3)										5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	102		
3.00	87		
4.00	75		

Hammer Information	
Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones		
Ref	From (m)	To (m)

Scale: 1:25

Logged By:	ADB
Checked By:	HJG
Approved By:	RNS
Section ID:	

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS3**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533229.680E/157172.930N Level: 173.510m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	168.06	Stiff red mottled brown CLAY with occasional angular, coarse flint gravel and yellow streaks. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS4**

Location Type: Window Sampler

Coords: 533218.670E/157140.640N Level: 173.760m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
0.10	ES ES1	PID 0.10m 0.40 ppm			0.20	173.56	Dark brown slightly sandy silt with frequent angular to subangular, fine to coarse gravel of brick, concrete, flint and plastic. Sand is fine to coarse. [MADE GROUND]					
							Soft to firm orangey brown mottled red CLAY with frequent angular to rounded, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
1.00	ES ES2											1
		SPT(C) 1.20m N=10 (2,2/2,3,3,2)										
1.40	D 1						*from 1.40 to 1.70m bgl - Gravelly clay band- abundant subrounded to subangular fine to coarse flint* *from 1.50 to 2.00m bgl - Becoming increasingly red in colour*					
		SPT(S) 2.00m N=12 (1,2/3,2,3,4)					*2.00m bgl - Becoming brown in colour* *from 2.00 to 3.00m bgl - Flint nodules occasional to rare*					2
2.40	D 2											
3.00	D 3	SPT(S) 3.00m N=11 (1,2/2,4,3,2)					*from 3.00 to 4.00m bgl - Flint nodules occasional to frequent* *from 3.00 to 5.00m bgl - Occasional organic matter*					3
3.20	D 4											
		PID 3.40m 1.90 ppm										
		SPT(S) 4.00m N=14 (6,6/3,3,3,5)										4
5.00	D 5	SPT(S) 5.00m N=10 (1,1/2,3,3,2)			5.00	168.76						5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter

Depth (m)	Diam (mm)
2.00	102
3.00	87
4.00	75

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS4**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533218.670E/157140.640N Level: 173.760m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 09/12/2022 Date End: 09/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	168.31	CHALK recovered in final SPT. Insufficient sample size for chalk description or to determine chalk grade. [WHITE CHALK SUBGROUP]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones: Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS5**

Location Type: Window Sampler

Coords: 533197.370E/157467.830N Level: 171.760m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	5.00	WS	Tracked Windowless Sampler Rig			

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling WS Run	Window Sampling Diam (mm)	Window Sampling Recovery (%)	Inst/ Backfill	Depth (m)
					0.30	171.46	Grass over black sandy gravel. Gravel is angular to subrounded of clinker. Sand is fine to coarse. [MADE GROUND]					
0.20	ES 1	PID 0.20m 0.40 ppm										
0.40	ES 2				0.50	171.26	White gravel of angular to subrounded, fine to coarse chalk and flint. Occasional chalk and flint cobbles. [MADE GROUND]					
							Stiff dark brown CLAY with occasional rounded, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
		SPT(S) 1.20m N=8 (1,2/2,2,2,2) HSV 1.20m (p)= 52 kPa			1.20	170.56						
							Soft to firm light brown mottled orange and grey sandy CLAY. Sand is fine. [CLAY-WITH-FLINTS FORMATION]					
1.50	D 1											
1.60	ES 3											
		HSV 1.80m (p)= 25 kPa										
							from 1.90 to 1.95m bgl - Clayey sand. Sand is fine.					
2.00	D 2	SPT(S) 2.00m N=10 (1,2/2,2,3,3)					*from 2.00 to 3.00m bgl - Brown mottled red*					
		HSV 2.30m (p)= 35 kPa										
2.50	D 3											
		HSV 2.80m (p)= 38 kPa					*from 2.70 to 3.00m bgl - Rare partially decomposed organic matter*					
							from 2.80 to 3.00m bgl - Grey mottling and red veining					
3.00	D 4	SPT(S) 3.00m N=11 (1,2/2,3,3,3)			3.00	168.76						
							Firm to stiff orangey yellow CLAY. [CLAY-WITH-FLINTS FORMATION]					
3.70	D 5											
3.90	EW 1											
		SPT(S) 4.00m N=20 (1,2/3,4,6,7)			4.00	167.76						
							Stiff red mottled brown CLAY. Rare yellow streaks. [CLAY-WITH-FLINTS FORMATION]					
4.60	D 6											
		SPT(S) 5.00m N=19 (2,4/4,3,5,7)										

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	102		
3.00	87		
4.00	75		

Hammer Information	
Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS5**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533197.370E/157467.830N Level: 171.760m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	166.31	Stiff red mottled brown CLAY. Rare yellow streaks. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Status:	Location ID
FINAL	**WS6**

Location Type: Window Sampler

Coords: 533123.830E/157440.800N Level: 171.480m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	WS Run	Window Sampling Diam (mm)	Window Sampling Recovery (%)	Inst/ Backfill	Depth (m)
					0.30	171.18	Grass over black sandy gravel. Gravel is angular to subangular, fine to coarse of concrete, flint and brick. Sand is fine to coarse. [MADE GROUND]					
0.20	ES 1	PID 0.20m 0.10 ppm										
					0.50	170.98	White silty gravel of chalk. Gravel is angular to subangular, fine to coarse. With rare angular, medium to coarse flint gravel. [MADE GROUND]					
0.40	ES 2						Stiff dark brown CLAY with occasional angular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
							1.00m bgl - Red mottling					1
		SPT(S) 1.20m N=10 (1,2/2,3,2,3)										
1.50	D 1	HSV 1.50m (p)= 73 kPa										
							1.70m bgl - Red mottled brown					
2.00	D 2	SPT(S) 2.00m N=9 (2,2/2,2,2,3)					*2.00m bgl - Occasional to rare angular to subrounded, coarse flint gravel*					2
		HSV 2.40m (p)= 85 kPa										
2.50	D 3											
3.00	D 4	SPT(S) 3.00m N=18 (2,3/3,4,5,6)					*from 3.00 to 5.00m bgl - Frequent angular fine to coarse flint gravel*					3
		HSV 3.20m (p)= 79 kPa										
		SPT(S) 4.00m N=17 (1,4/5,5,4,3)					*from 4.00 to 5.00m bgl - Finely laminated with partially decomposed organic matter*					4
		SPT(S) 5.00m N=19 (2,3/4,4,6,5)										5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter Depth (m)	Hole Diameter Diam (mm)	Casing Depth (m)	Casing Diam (mm)
2.00	102		
3.00	87		
4.00	75		

Hammer Information Energy Ratio	Hammer Information Serial No.
66%	CKWS01

Install Response Zones Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS6**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533123.830E/157440.800N Level: 171.480m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	166.03	Stiff dark brown CLAY with occasional angular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones: Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey

Client: Daniel Watney LLP

Status: **FINAL**

Location ID: **WS7**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533124.680E/157412.510N Level: 172.600m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	WS Run	Window Sampling Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
0.10	ES 1	PID 0.10m -0.10 ppm			0.25	172.35	Tarmac over black sandy gravel. Gravel of angular to subangular, fine to coarse fragmented brick. Sand is fine to coarse. [MADE GROUND]					
		SPT(S) 1.20m N=12 (1,1/3,3,3,3)			1.20	171.40	Soft to firm light brown silty CLAY with occasional angular, fine to coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					1
1.50	D 1	PID 1.40m 0.20 ppm HSV 1.60m (p)= 73 kPa			1.90	170.70	Firm to stiff orangey brown CLAY with occasional rare partially decomposed organic matter. [CLAY-WITH-FLINTS FORMATION]					
2.00	D 2	SPT(S) 2.00m N=14 (1,2/2,3,4,5)					Stiff red mottled brown slightly silty CLAY with rare, subangular, coarse flint gravel. [CLAY-WITH-FLINTS FORMATION]					2
2.40	D 3	HSV 2.20m (p)= 81 kPa										
3.00	D 4	SPT(S) 3.00m N=25 (2,3/4,6,7,8) HSV 3.20m (p)= 93 kPa			3.20	169.40						3
3.60	D 5				3.70	168.90	Stiff yellowy brown sandy CLAY. Sand is fine to medium. [CLAY-WITH-FLINTS FORMATION] *3.30m bgl - Clayey Sand. Sand is fine to medium.*					
		SPT(S) 4.00m N=21 (1,3/3,4,6,8)					Stiff to very stiff red CLAY with rare subangular to angular, medium flint gravel. [CLAY-WITH-FLINTS FORMATION]					4
4.10	D 6											
4.50	D 7											
		SPT(S) 5.00m N=28 (3,5/7,6,7,8)										5

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter Depth (m)	Hole Diameter Diam (mm)
2.00	102
3.00	87
4.00	75

Casing Depth (m)	Casing Diam (mm)

Hammer Information Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB

Checked By: HJG

Approved By: RNS

Section ID:

CGL Reference **CG/39415**

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS7**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533124.680E/157412.510N Level: 172.600m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Surrey,
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Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	167.15	Stiff to very stiff red CLAY with rare subangular to angular, medium flint gravel. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones: Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS8**

Location Type: Window Sampler

Coords: 533166.630E/157361.850N Level: 172.660m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

Card Geotechnics Limited,
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Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	5.00	WS	Tracked Windowless Sampler Rig			

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling			Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						WS Run	Diam (mm)	Recovery (%)		
					0.40	172.26	Grass over dark brown silty gravelly CLAY. Gravel angular, fine to medium of flint. [TOPSOIL]					
0.60	ES 1						Stiff to firm orangey brown mottled red clay with occasional angular to subrounded, fine to coarse flint gravel and black and yellow streaks in the clay. [CLAY-WITH-FLINTS FORMATION]					
		SPT(S) 1.20m N=11 (1,2/3,2,3,3)										
		HSV 1.50m (p)= 64 kPa										
1.60	D 1				1.60	171.06						
							Stiff orangey brown slightly sandy CLAY. Sand is fine to coarse. [CLAY-WITH-FLINTS FORMATION]					
2.00	D 2	SPT(S) 2.00m N=15 (1,2/2,4,4,5)			2.10	170.56						
		HSV 2.20m (p)= 62 kPa					Stiff to very stiff orangey brown mottled red CLAY with frequent angular to subrounded, fine to coarse flint gravel and black and yellow streaks in the clay. [CLAY-WITH-FLINTS FORMATION]					
2.50	D 3						*from 2.30 to 3.00m bgl - Frequent rounded, fine to coarse flint recovered as angular, fine to coarse flint gravel.*					
		SPT(S) 3.00m N=24 (2,5/8,5,5,6)					*from 3.00 to 5.00m bgl - Colouration becoming dark brown.*					
3.40 - 3.50	D 4						*from 3.30 to 3.40m bgl - Orangey brown fine sand.*					
		SPT(S) 4.00m N=24 (4,6/5,6,7,6)										
4.20	ES 2	PID 4.20m 8.80 ppm					*4.20m bgl - Partially decomposed organic matter with an organic odour.*					
4.30	D 5											
4.65	D 6						*from 4.60 to 5.00m bgl - Black organic matter.*					
		SPT(S) 5.00m N=44 (8,9/16,10,10,8)										

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	102		
3.00	87		
4.00	75		

Hammer Information	
Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones		
Ref	From (m)	To (m)

Scale: 1:25

Logged By:	ADB
Checked By:	HJG
Approved By:	RNS
Section ID:	

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS8**

Location Type: Window Sampler

Coords: 533166.630E/157361.850N Level: 172.660m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Surrey,
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www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	167.21	Stiff to very stiff orangey brown mottled red CLAY with frequent angular to subrounded, fine to coarse flint gravel and black and yellow streaks in the clay. [CLAY-WITH-FLINTS FORMATION]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Position not installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS9**

Location Type: Window Sampler

Coords: 533111.730E/157351.580N Level: 172.660m

Ordnance Survey Great Britain National Grid | Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	5.00	WS	Tracked Windowless Sampler Rig			

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling WS Run	Window Sampling Diam (mm)	Window Sampling Recovery (%)	Inst/ Backfill	Depth (m)
0.10	ES 1				0.10	172.56	Soft dark brown sandy gravelly clay. Gravel is angular to subrounded, fine to medium of chalk and brick. Sand is fine to coarse. [MADE GROUND]					
					0.20	172.46	White angular to subangular, medium to coarse chalk gravel. Occasional chalk cobbles. [MADE GROUND]					
							Stiff orangey brown mottled red CLAY with occasional angular to subrounded, fine to coarse flint gravel. Occasional yellow and rare black streaks in the clay. [CLAY-WITH-FLINTS FORMATION]					
1.20	ES 2	SPT(S) 1.20m N=12 (1,1/3,4,2,3)										
1.30	D 1											
		HSV 1.60m (p)= 90 kPa										
		SPT(C) 2.00m N=19 (2,3/3,4,6,6)					*from 2.00 to 3.00m bgl - Colouration becoming brown*					
		PID 2.10m 0.60 ppm					*from 2.00 to 5.00m bgl - Flint gravel abundant and coarse*					
2.30	D 2											
		HSV 2.40m (p)= 150 kPa										
2.90	D 3											
		SPT(C) 3.00m N=17 (3,3/5,4,4,4)					*from 3.00 to 4.00m bgl - Colouration becomes dark brown*					
3.10	D 4											
		SPT(S) 4.00m N=9 (4,1/2,4,2,1)										
4.40	D 5				4.40	168.26	Structured CHALK recovered as white slightly gravelly SILT. Gravel recovered as low density, very weak, subangular and fine to medium of white chalk. [WHITE CHALK SUBGROUP]					
		SPT(S) 5.00m N=27 (1,4/3,5,7,12)										

Strata continues onto next page

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter Depth (m)	Hole Diameter Diam (mm)
2.00	102
3.00	87
4.00	75

Casing Depth (m)	Casing Diam (mm)

Hammer Information Energy Ratio	Hammer Information Serial No.
66%	CKWS01

Install Response Zones Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

Project Title: Kenley Campus, Caterham, Surrey	Status:	Location ID
Client: Daniel Watney LLP	**FINAL**	**WS9**

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	WS	Tracked Windowless Sampler Rig

Groundwater

Strike (m)	Time (min)	Rose To

Location Type: Window Sampler

Coords: 533111.730E/157351.580N Level: 172.660m

Ordnance Survey Great Britain National Grid

Final Depth: **5.45 m**

Orientation: 0° Inclination: 90°

Date Start: 08/12/2022 Date End: 08/12/2022

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www.cgl-uk.com

Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Window Sampling: WS Run	Diam (mm)	Recovery (%)	Inst/ Backfill	Depth (m)
					5.45	167.21	Structured CHALK recovered as white slightly gravelly SILT. Gravel recovered as low density, very weak, subangular and fine to medium of white chalk. [WHITE CHALK SUBGROUP]					
							EOH at 5.45m - Achieved target depth					

Notes:

1. Position terminated at target depth of 5.45 mbgl
2. No groundwater encountered
3. Installation details: 0.0 to 0.5m 50mm plain pipe with a bentonite seal between 0.2 and 0.5m; 50mm slotted pipe with gravel filter between 0.5 and 5.0m. Bung, gas tap and flush cover installed
4. Densities and consistencies above 1.2 mbgl based on Engineer's observations.

Hole Diameter: Depth (m)	Diam (mm)
5.45	65

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio	Serial No.
66%	CKWS01

Install Response Zones

Ref	From (m)	To (m)
Pipe1	0.50	5.00

Scale: 1:25

Logged By: ADB
Checked By: HJG
Approved By: RNS
Section ID:

CGL Reference
CG/39415

APPENDIX H

CGL Monitoring Records

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	KENLEY CAMPUS, CATERHAM, SURREY	Job No:	CG/39415
Date:	22/12/2022	Engineer:	ADB
Time:	09:00-12:00	Client	DANIEL WATNEY LLP

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry		Moist	x	Wet				
Wind:	Calm	x	Light		Moderate		Strong		
Cloud cover:	None		Slight		Cloudy		Overcast	x	
Precipitation:	None		Slight		Moderate	x	Heavy		

Barometric pressure (mb): 964-970 Local pressure system*: Falling Air temperature (°C): 7 to 10

Well No.	Time (s)	Flow (l/hr)	Flow (l/hr)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to Groundwater (mbgl)	Depth to base (mbgl)
WS9 970mb	0	0.0	0.0	20.7	0.0	0.0	0.0	DRY	4.95
	15	0.0	0.0	19.0	0.7	0.0	0.1		
	30	0.0	0.0	17.8	0.8	0.0	0.2		
	45	0.0	0.0	17.7	0.8	0.0	0.2		
	60	0.0	0.0	17.6	0.8	0.0	0.2		
	90	0.0	0.0	17.6	0.8	0.0	0.2		
	120	0.0	0.0	17.6	0.8	0.0	0.2		
	150	0.0	0.0	17.6	0.8	0.0	0.2		
	180	0.0	0.0	17.6	0.8	0.0	0.2		
	240								
	300								
BH1 968mb	0	0.0	0.0	20.3	0.0	0.0	0.0	DRY	15.00
	15	0.0	0.0	19.0	1.0	0.0	0.2		
	30	0.1	0.0	18.6	1.1	0.0	0.3		
	45	0.2	1.0	18.4	1.1	0.0	0.3		
	60	0.2	1.0	18.4	1.1	0.0	0.4		
	90	0.0	0.0	18.4	1.1	0.0	0.4		
	120	0.0	0.0	18.3	1.2	0.0	0.4		
	150	0.0	0.0	18.2	1.3	0.0	0.4		
	180	0.0	0.0	18.2	1.3	0.0	0.4		
	240			18.2	1.3	0.0			
	300								
WS5 966mb	0	0.0	0.0	20.2	0.0	0.0	0.0	2.85	4.95
	15	0.0	0.0	18.5	1.6	0.0	0.1		
	30	0.0	0.0	18.0	1.7	0.0	0.1		
	45	0.0	0.0	17.9	1.7	0.0	0.1		
	60	0.0	0.0	17.9	1.7	0.0	0.1		
	90	0.0	0.0	18.1	1.5	0.0	0.1		
	120	0.0	0.0	18.4	1.3	0.0	0.1		
	150	0.0	0.0	18.5	1.1	0.0	0.1		
	180	0.0	0.0	18.7	1.0	0.0	0.1		
	240								
	300								
	360								
WS4 964mb	0	0.0	0.0	20.1	0.0	0.0	0.0	DRY	5.02
	15	0.0	0.0	19.0	1.5	0.0	0.1		
	30	0.0	0.0	18.6	1.6	0.0	0.1		
	45	0.0	0.0	18.4	1.7	0.0	0.1		
	60	0.0	0.0	18.4	1.8	0.0	0.1		
	90	0.0	0.0	18.1	1.9	0.0	0.1		
	120	0.0	0.0	17.9	2.0	0.0	0.1		
	150	0.0	0.0	17.8	2.1	0.0	0.1		
	180	0.0	0.0	17.7	2.1	0.0	0.1		
	240			17.7	2.1				
	300			17.7	2.1				
WS1 964mb	0	0.0	0.0	20.0	0.0	0.0	0.1	4.70	5.0
	15	0.0	0.0	19.9	0.7	0.0	0.2		
	30	0.0	0.0	19.6	0.8	0.0	0.2		
	45	0.0	0.0	19.5	0.8	0.0	0.2		
	60	0.0	0.0	19.6	0.8	0.0	0.2		
	90	0.0	0.0	19.6	0.8	0.0	0.2		
	120	0.0	0.0	19.6	0.8	0.0	0.2		
	150	0.0	0.0	19.5	0.8	0.0	0.2		
	180	0.0	0.0	19.6	0.8	0.0	0.2		
	240								
	300								

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Weather Underground rolling weather archive for Kenley Airfield weather station.*
NR= Not recorded

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	KENLEY CAMPUS, CATERHAM, SURREY	Job No:	CG/39415
Date:	09/01/2023	Engineer:	ADB
Time:	09:00- 12:00	Client	DANIEL WATNEY LLP

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry		Moist	x	Wet				
Wind:	Calm	x	Light		Moderate		Strong		
Cloud cover:	None		Slight		Cloudy		Overcast	x	
Precipitation:	None	x	Slight		Moderate		Heavy		

Barometric pressure (mb): 979-982 | Local pressure system*: Rising | Air temperature (°C): 4.6-7.7

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to Groundwater (mbgl)	Depth to base (mbgl)
WS9 980mb	0	0.0	0.0	20.2	0.0	0.0	0.0	DRY	4.96
	15	-2.4	-9.0	15.5	2.0	0.0	0.0		
	30	-0.5	-2.0	13.5	2.1	0.0	0.0		
	45	-0.9	-3.0	13.2	2.1	0.0	0.0		
	60	-0.3	-1.0	13.1	2.1	0.0	0.0		
	90	-0.5	-2.0	13.0	2.1	0.0	0.0		
	120	-0.3	-1.0	13.0	2.1	0.0	0.0		
	150	0.1	1.0	13.0	2.1	0.0	0.0		
	180	-0.5	-2.0	13.0	2.1	0.0	0.0		
	240								
	300								
BH1 979mb	0	0.0	0.0	20.5	0.0	0.0	0.0	DRY	15.02
	15	-2.9	-12.0	19.5	0.8	0.0	0.2		
	30	-1.7	-7.0	18.7	0.9	0.0	0.3		
	45	-2.4	-11.0	18.6	0.9	0.0	0.3		
	60	-2.6	-11.0	18.6	0.9	0.0	0.3		
	90	-3.0	-12.0	18.6	0.9	0.0	0.4		
	120	-3.0	-12.0	18.5	0.9	0.0	0.4		
	150	-2.8	-12.0	18.5	1.0	0.0	0.4		
	180	-1.7	-7.0	18.5	1.0	0.0	0.4		
	240			18.4	1.0				
	300								
WS5 980mb	0	-60.0		20.2	0.0	0.0	0.0	3.90	4.95
	15	-20.0	-120.0	14.2	4.6	0.0	0.1		
	30	-1.1	-5.0	13.1	4.9	0.0	0.3		
	45	-0.7	-3.0	12.6	5.0	0.0	0.3		
	60	-0.5	-3.0	12.3	5.3	0.0	0.3		
	90	-0.7	-3.0	11.8	5.7	0.0	0.3		
	120	0.0	0.0	11.3	6.0	0.0	0.3		
	150	-0.9	-4.0	10.8	6.4	0.0	0.4		
	180	-0.2	-1.0	10.3	6.8	0.0	0.4		
	240			9.8	7.1	0.0	0.5		
	300			9.7	7.2	0.0	0.5		
	360			9.6	7.2	0.0	0.5		
	420			9.7	7.1	0.0			
WS1 982mb	0	0.0	0.0	20.2	0.0	0.0	0.0	1.45	4.95
	15	-0.1	-1.0	19.4	0.9	0.0	0.0		
	30	-0.1	-1.0	19.0	0.9	0.0	0.0		
	45	-0.1	-1.0	19.0	0.9	0.0	0.0		
	60	-0.1	-1.0	19.0	0.9	0.0	0.0		
	90	-0.1	-1.0	19.0	0.9	0.0	0.0		
	120	-0.1	-1.0	19.0	0.9	0.0	0.0		
	150	-0.1	-1.0	19.0	0.9	0.0	0.0		
	180	-0.1	-1.0	19.0	0.9	0.0	0.0		
	240								
	300								
WS4 982mb	0	0.0	0.0	19.4	0.0	0.0	0.0	DRY	5.0
	15	-1.5	-6.0	20.5	0.0	0.0	0.0		
	30	-1.5	-6.0	20.0	0.0	0.0	0.0		
	45	-1.3	-6.0	20.0	0.0	0.0	0.0		
	60	-2.2	-9.0	20.0	0.0	0.0	0.0		
	90	-2.6	-11.0	20.0	0.0	0.0	0.0		
	120	-2.2	-9.0	20.0	0.0	0.0	0.0		
	150	-1.7	-7.0	20.0	0.0	0.0	0.0		
	180	-3.0	-12.0	20.0	0.0	0.0	0.0		
	240								
	300								

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Weather Underground rolling weather archive for Kenley Airfield weather station.*
NR= Not recorded

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	KENLEY CAMPUS, CATERHAM, SURREY	Job No:	CG/39415
Date:	23/01/2023	Engineer:	ADB
Time:	09:00-12:00	Client	DANIEL WATNEY LLP

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry		Moist		Wet	x (Frozen)			
Wind:	Calm	x	Light		Moderate		Strong		
Cloud cover:	None		Slight	x	Cloudy		Overcast		
Precipitation:	None	x	Slight		Moderate		Heavy		

Barometric pressure (mb): 985-987 Local pressure system*: Stable Air temperature (°C): negative 0.5 to positive 1.3

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to Groundwater (mbgl)	Depth to base (mbgl)
WS9 985mb	0	0.0	0.0	19.8	1.4	0.0	0.0	DRY	4.98
	15	0.0	0.0	11.1	2.4	0.0	0.0		
	30	0.0	0.0	10.3	2.4	0.0	0.0		
	45	0.0	0.0	10.3	2.4	0.0	0.0		
	60	0.0	0.0	10.2	2.4	0.0	0.0		
	90	0.0	0.0	10.2	2.4	0.0	0.0		
	120	0.0	0.0	10.2	2.4	0.0	0.0		
	150	0.0	0.0	10.2	2.4	0.0	0.0		
	180	0.0	0.0	10.2	2.4	0.0	0.0		
	240								
	300								
BH1	0	FROZEN OVER UNABLE TO MONITOR							
	15								
	30								
	45								
	60								
	90								
	120								
	150								
	180								
	240								
	300								
WS5 987mb	0	0.0	0.0	19.7	0.0	0.0	0.0	4.88	4.96
	15	0.0	0.0	11.6	7.2	0.0	0.0		
	30	0.0	0.0	9.2	7.5	0.0	0.0		
	45	0.0	0.0	8.8	7.5	0.0	0.0		
	60	0.0	0.0	8.7	7.5	0.0	0.0		
	90	0.0	0.0	8.7	7.5	0.0	0.0		
	120	0.0	0.0	8.7	7.5	0.0	0.0		
	150	0.0	0.0	8.7	7.5	0.0	0.0		
	180	0.0	0.0	8.7	7.5	0.0	0.0		
	240								
	300								
WS4 987mb	0	0.0	0.0	19.3	0.0	0.0	0.0	DRY	5.05
	15	0.0	0.0	19.8	0.3	0.0	0.0		
	30	0.1	1.0	19.7	0.3	0.0	0.0		
	45	0.0	0.0	19.7	0.3	0.0	0.0		
	60	0.0	0.0	19.6	0.3	0.0	0.0		
	90	0.0	0.0	19.6	0.3	0.0	0.0		
	120	0.2	1.0	19.6	0.3	0.0	0.0		
	150	0.5	2.0	19.6	0.3	0.0	0.0		
	180	0.6	3.0	19.6	0.3	0.0	0.0		
	240	0.7	3.0						
	300	1.0	4.0						
	360	1.0	5.0						
	420	1.5	7.0						
	480	2.1	9.0						
	540	2.6	12.0						
	600	2.8	13.0						
	660	3.0	14.0						
	720	2.8	13.0						
WS1 987mb	0	0.0	0.0	19.5	0.0	0.0	0.0	1.87	4.95
	15	0.0	0.0	18.7	0.9	0.0	0.0		
	30	0.0	0.0	18.3	0.9	0.0	0.0		
	45	0.0	0.0	18.3	0.9	0.0	0.0		
	60	0.0	0.0	18.3	0.9	0.0	0.0		
	90	0.0	0.0	18.3	0.9	0.0	0.0		
	120	0.0	0.0	18.3	0.9	0.0	0.0		
	150	0.0	0.0	18.3	0.9	0.0	0.0		
	180	0.0	0.0	18.3	0.9	0.0	0.0		
	240								
	300								

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Weather Underground rolling weather archive for Kenley Airfield weather station.*
NR= Not recorded

GROUNDWATER MONITORING RECORD SHEET

JOB DETAILS			
Site:	KENLEY CAMPUS, CATERHAM, SURREY	Job No:	CG/39415
Date:	09/01/2023	Engineer:	ADB
Time:	09:00-12:00	Client	DANIEL WATNEY LLP
Weather:	Overcast		

MONITORING & SAMPLING DETAILS								
Well / Borehole reference:	WS5	WS1						
Monitoring details								
Ground elevation (+mOD)								
Groundwater depth (mbgl)	3.9	1.45						
Groundwater elevation (+mOD)								
Depth to base of well (mbgl)	4.95	4.95						
Diameter of well (m)	0.05	0.05						
Condition of well	Good	Good						
Top of response zone (mbgl)	0.5	0.5						
Base of response zone (mbgl)	5	5						
Free product thickness (m)	0	0						
Hydrocarbon sheen noted (Y/N)	N	N						
Purging details								
Purge method	Bailor	Bailor						
Purged volume (litres)	3L	8L						
Recharge (good / poor)	Poor	Poor						
Sampling details								
Sampling method	Bailor	Bailor						
Volume of water sample taken (litres)	2 x bottles and 2 x vials							
Volume of free product sample taken (litres)	0	0						
Colour / odours noted*	Opaque orangey brown with rare, fine, brown floating organic matter. Odourless.							
In-situ measurements								
pH	8.1	7.74						
Temperature (^{o}C)	10.5	10.4						
Dissolved oxygen (mg/l)	13.3	13.6						
Redox potential (mV)	75mV	92mV						
Electrical conductivity (µS/cm)	1.06 mS	0.99						
Total dissolved solids (ppt)	0.63	0.52						

* Respiratory protective equipment to be worn if odours are noted during initial monitoring & on sites which are potentially contaminated

NOTES

APPENDIX I

Chemical Analysis Results

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i2 Analytical Ltd.
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Analytical Report Number : 22-12888

Replaces Analytical Report Number: 22-12888, issue no. 1
Additional analysis undertaken.

Project / Site name:	Kenley Campus	**Samples received on:**	12/12/2022
Your job number:	CG-39415	**Samples instructed on/ Analysis started on:**	13/12/2022
Your order number:	POP01075	**Analysis completed by:**	03/01/2023
Report Issue Number:	2	**Report issued on:**	24/01/2023
Samples Analysed:	6 leachate samples - 18 soil samples		

Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530761	2530762	2530763	2530764	2530765
Sample Reference				TP10	TP7	TP5	TP3	TP11
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.40	0.65	0.20	0.20	0.10
Date Sampled				06/12/2022	06/12/2022	06/12/2022	07/12/2022	07/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	20	21	16	9
Total mass of sample received	kg	0.001	NONE	0.3	0.8	0.8	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	0.272	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	0.272	-
Asbestos Analyst ID	N/A	N/A	N/A	DSO	N/A	DSO	DSO	DSO
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.8	8.1	7.5	7.9	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	760	170	470	580	1700
Organic Matter (automated)	%	0.1	MCERTS	2.1	0.8	3.6	3.3	0.7
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.39	0.35	0.32	0.36	0.24
Acenaphthylene	mg/kg	0.05	MCERTS	0.42	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	3	< 0.05	0.11	0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	1.8	< 0.05	0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	26	< 0.05	1.1	0.3	0.14
Anthracene	mg/kg	0.05	MCERTS	8	< 0.05	0.18	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	54	< 0.05	2.8	0.62	0.95
Pyrene	mg/kg	0.05	MCERTS	46	< 0.05	2.5	0.58	0.97
Benzo(a)anthracene	mg/kg	0.05	MCERTS	25	< 0.05	1.3	0.29	0.97
Chrysene	mg/kg	0.05	MCERTS	20	< 0.05	1.3	0.39	1.2
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	27*	< 0.05	1.9*	0.4*	1.8*
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	9.2	< 0.05	0.44	0.2	0.93
Benzo(a)pyrene	mg/kg	0.05	MCERTS	21	< 0.05	1.2	0.35	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	11	< 0.05	0.73	0.22	1.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.5	< 0.05	0.16	0.06	0.26
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	11	< 0.05	0.91	0.27	1.5
Coronene	mg/kg	0.05	NONE	2.7	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	270	< 0.85	15	4.09	11.1
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3.3	4.5	< 1.0	2.9	< 1.0
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	19	14	15	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	71	60	95	83	57
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.7	0.96	0.92	0.77	0.59
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.9	1.1	0.8	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.5	0.6	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	27	58	28	34	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	58	29	35	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	16	27	51	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	18	68	58	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	18	18	16	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530761	2530762	2530763	2530764	2530765
Sample Reference				TP10	TP7	TP5	TP3	TP11
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.40	0.65	0.20	0.20	0.10
Date Sampled				06/12/2022	06/12/2022	06/12/2022	07/12/2022	07/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	40	89	48	51	38
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	42	93	87	25
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	2.9	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	16	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	24	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	6.9	< 1.0	1.4	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	28	< 2.0	4.6	3.1	3
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	79	< 10	< 10	10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	130	< 10	13	15	20
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	240	< 10	29	29	33
PCBs by GC-MS*								
PCB Congener 28	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	< 0.001	-	-
Total PCBs by GC-MS*								
Total PCBs	mg/kg	0.007	NONE	-	-	< 0.007	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

*Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted and the failure justified as having no significant impact on sample data reported.

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530766	2530767	2530768	2530769	2530770
Sample Reference				TP4	TP1	TP12	WS8	WS6
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.20	0.20	0.30	0.60	0.20
Date Sampled				07/12/2022	07/12/2022	07/12/2022	08/12/2022	08/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	29	19	< 0.1	27
Moisture Content	%	0.01	NONE	15	14	14	24	10
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	DSO	DSO	DSO	N/A	DSO
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8	6	8.8	8.3	9.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	850	400	730	220	2100
Organic Matter (automated)	%	0.1	MCERTS	3.3	2.4	1.6	0.6	8.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.29	0.14	0.16	0.8	5.1*
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	< 0.05	< 0.05	0.17	14*
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.06	< 0.05	0.87	20*
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1	29*
Phenanthrene	mg/kg	0.05	MCERTS	1.1	0.41	0.23	7.4	230*
Anthracene	mg/kg	0.05	MCERTS	0.21	0.07	< 0.05	1.8	75*
Fluoranthene	mg/kg	0.05	MCERTS	3.1	1.1	0.59	11	430*
Pyrene	mg/kg	0.05	MCERTS	2.8	1	0.52	9.9	360*
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.6	0.55	0.31	5.6	230*
Chrysene	mg/kg	0.05	MCERTS	1.7	0.6	0.38	5.3	170*
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2*	0.63*	0.41*	5.8	210*
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.97	0.25	0.21	2.2	92*
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.7	0.45	0.34	4.7	170*
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1	0.31	0.26	2.4	77*
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.24	0.07	0.06	0.66	21*
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.3	0.36	0.32	2.5	80*
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	18	6.03	3.79	62.4	2220
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.4	3.3	5.4	5.5	< 1.0
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	15	15	24	8.3
Barium (aqua regia extractable)	mg/kg	1	MCERTS	280	110	120	89	530
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1	1.1	0.96	1.2	5.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.2	1.2	0.8	3.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2	< 0.2	0.5	< 0.2	0.6
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	35	31	29	68	51
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	31	29	68	51
Copper (aqua regia extractable)	mg/kg	1	MCERTS	72	58	36	26	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	190	57	73	26	32
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.1	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	23	17	23	5.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	5.1

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530766	2530767	2530768	2530769	2530770
Sample Reference				TP4	TP1	TP12	WS8	WS6
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.20	0.20	0.30	0.60	0.20
Date Sampled				07/12/2022	07/12/2022	07/12/2022	08/12/2022	08/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	44	48	46	130	120
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	240	75	110	53	52
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	14
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	25
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	38
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	77
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.7
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	4.5	< 2.0	< 2.0	5.5	190
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	17	< 10	< 10	24	1600
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	24	< 10	< 10	41	2800
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	45	< 10	< 10	71	4600
PCBs by GC-MS*								
PCB Congener 28	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs by GC-MS*								
Total PCBs	mg/kg	0.007	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

*Data reported unaccredited due to quality control parameter failure associated with this r
applied prior to reporting the data have been accepted and the failure justified as having n
impact on sample data reported.

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530771	2530772	2530773	2530774	2530775
Sample Reference				WS5	WS5	WS4	WS4	WS2
Sample Number				ES1	ES3	ES1	ES2	ES3
Depth (m)				0.20	1.60	0.10	1.00	0.90
Date Sampled				08/12/2022	08/12/2022	09/12/2022	09/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	32	< 0.1	29	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	14	13	22	17
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	DSO	N/A	DSO	N/A	PDO
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.5	7.7	8.2	8.3	7.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	1.4	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	2400	150	900	200	250
Organic Matter (automated)	%	0.1	MCERTS	11	0.3	3.4	0.6	0.9
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	1.4	< 1.0	1.3	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	4.1*	0.35	0.49	0.43	0.34
Acenaphthylene	mg/kg	0.05	MCERTS	15*	< 0.05	0.12	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	51*	< 0.05	0.08	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	55*	< 0.05	0.08	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	710*	0.09	1.1	0.06	0.06
Anthracene	mg/kg	0.05	MCERTS	220*	< 0.05	0.21	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	910*	0.1	2.4	0.13	0.13
Pyrene	mg/kg	0.05	MCERTS	750*	0.09	2.3	0.11	0.12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	410*	0.05	1.4	0.07	0.08
Chrysene	mg/kg	0.05	MCERTS	380*	0.05	1.2	0.07	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	430*	0.06	1.5	0.09	0.09
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	150*	< 0.05	0.79	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	380*	< 0.05	1.3	0.05	0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	200*	< 0.05	0.78	< 0.05	0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	49*	< 0.05	0.24	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	210*	< 0.05	0.95	< 0.05	0.06
Coronene	mg/kg	0.05	NONE	20	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	4950	< 0.85	14.8	1.01	1.06
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1.0	< 1.0	4.2	6.6	2.7
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	16	13	29	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	780	33	190	71	62
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	5	0.58	0.78	1.3	0.72
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	0.7	1	1.1	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	2.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	46	87	36	61	29
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	46	87	36	61	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	10	54	26	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	16	120	25	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	1.6	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	8.7	20	27	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530771	2530772	2530773	2530774	2530775
Sample Reference				WS5	WS5	WS4	WS4	WS2
Sample Number				ES1	ES3	ES1	ES2	ES3
Depth (m)				0.20	1.60	0.10	1.00	0.90
Date Sampled				08/12/2022	08/12/2022	09/12/2022	09/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	67	63	38	120	40
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	99	23	200	66	50
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	18	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	68	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	410	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	490	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	11	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	330	< 2.0	2.4	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	2600	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	3600	< 10	12	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	6500	< 10	21	< 10	< 10
PCBs by GC-MS*								
PCB Congener 28	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	0.002	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	0.001	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	< 0.001	-	-
Total PCBs by GC-MS*								
Total PCBs	mg/kg	0.007	NONE	-	-	< 0.007	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

*Data reported unaccredited due to quality control parameter failure associated with this r
applied prior to reporting the data have been accepted and the failure justified as having n
impact on sample data reported.

Analytical Report Number: 22-12888
Project / Site name: Kenley Campus
Your Order No: POP01075

Lab Sample Number				2530776	2530777	2530778
Sample Reference				WS10	WS11	WS1
Sample Number				ES1	ES1	ES1
Depth (m)				0.40	0.20	1.00
Date Sampled				09/12/2022	09/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	14	17
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	PDO	N/A
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	8.6	10.7	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	320	2100	240
Organic Matter (automated)	%	0.1	MCERTS	1.1	2	0.6
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	0.41	0.41	0.37*
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.31*
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05*
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.18*
Phenanthrene	mg/kg	0.05	MCERTS	0.14	0.4	0.26*
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	0.17*
Fluoranthene	mg/kg	0.05	MCERTS	0.28	0.61	0.43*
Pyrene	mg/kg	0.05	MCERTS	0.25	0.57	0.36*
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.15	0.34	0.21*
Chrysene	mg/kg	0.05	MCERTS	0.14	0.43	0.2*
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.17	0.48	0.24*
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.06	0.2	0.14*
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.1	0.36	0.22*
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.08	0.22	< 0.05*
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.05	< 0.05*
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.11	0.26	< 0.05*
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05
Total PAH						
Total WAC-17 PAHs	mg/kg	0.85	NONE	1.89	4.39	3.09
Heavy Metals / Metalloids						
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3.5	2.7	3.2
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	15	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	64	170	80
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.74	1.1	0.95
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.9	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	37	55	34
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	37	55	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	32	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	49	53	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	36	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2530776	2530777	2530778
Sample Reference				WS10	WS11	WS1
Sample Number				ES1	ES1	ES1
Depth (m)				0.40	0.20	1.00
Date Sampled				09/12/2022	09/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	48	44	51
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	47	120	59
Monoaromatics & Oxygenates						
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons						
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10
PCBs by GC-MS*						
PCB Congener 28	mg/kg	0.001	NONE	-	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	-
Total PCBs by GC-MS*						
Total PCBs	mg/kg	0.007	NONE	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

*Data reported unaccredited due to quality control parameter failure associated with this r
applied prior to reporting the data have been accepted and the failure justified as having n
impact on sample data reported.

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Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2530764	TP3	0.20	118	Hard/Cement Type Material	**Chrysotile**	0.272	**0.272**

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

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Lab Sample Number				2530779	2530780	2530781	2530782	2530783
Sample Reference				TP10	TP5	TP12	WS5	WS4
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.40	0.20	0.30	0.20	0.10
Date Sampled				06/12/2022	06/12/2022	07/12/2022	08/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH (automated)	pH Units	N/A	ISO 17025	8.2	7.0	8.0	7.8	7.9
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	1.6	< 1.0
Free Cyanide	µg/l	10	ISO 17025	-	-	-	< 10	-
Sulphate as SO_4	µg/l	100	ISO 17025	20400	2590	2450	48900	3780
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	12.7	18.8	9.33	14.2	12.1
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	1.1	1.6	4.5	3.6
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	7.9	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.52	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	0.68	< 0.01	< 0.01	5.4	< 0.01
Fluorene	µg/l	0.01	ISO 17025	0.27	< 0.01	< 0.01	3	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	0.94	< 0.01	< 0.01	9.6	< 0.01
Anthracene	µg/l	0.01	ISO 17025	0.33	< 0.01	< 0.01	2	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	0.19	< 0.01	< 0.01	4.4	< 0.01
Pyrene	µg/l	0.01	ISO 17025	0.13	< 0.01	< 0.01	3.4	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	1.2	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	1.1	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	1.2	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.41	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.9	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	0.39	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	0.46	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	2.5	< 0.2	< 0.2	42	< 0.2
Heavy Metals / Metalloids								
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	1.6	< 1.0	1.1	3.3	3.8
Barium (dissolved)	µg/l	0.05	ISO 17025	9.7	8.9	24	120	17
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	< 10	15	14	15	< 10
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	5.5	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	5.5	0.9	< 0.4	< 0.4	1.5
Copper (dissolved)	µg/l	0.7	ISO 17025	15	18	7.8	24	28
Lead (dissolved)	µg/l	1	ISO 17025	2.4	4	< 1.0	2.1	1.2
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.8	1.7	1.2	1.9	2.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	4.4
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3	2.1	4	6	6.5
Zinc (dissolved)	µg/l	0.4	ISO 17025	9.2	9.5	3.3	15	19
Calcium (dissolved)	mg/l	0.012	ISO 17025	20	4.7	17	29	21
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2530779	2530780	2530781	2530782	2530783
Sample Reference				TP10	TP5	TP12	WS5	WS4
Sample Number				ES1	ES1	ES1	ES1	ES1
Depth (m)				0.40	0.20	0.30	0.20	0.10
Date Sampled				06/12/2022	06/12/2022	07/12/2022	08/12/2022	09/12/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	35	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	50	< 10	< 10	200	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	80	< 10	< 10	360	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	300	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_MS}$	µg/l	10	NONE	130	< 10	< 10	900	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Lab Sample Number				2530784
Sample Reference				WS2
Sample Number				ES3
Depth (m)				0.90
Date Sampled				09/12/2022
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
pH (automated)	pH Units	N/A	ISO 17025	8.0
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Free Cyanide	µg/l	10	ISO 17025	-
Sulphate as SO_4	µg/l	100	ISO 17025	7280
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	7.03
Total Phenols				
Total Phenols (monohydric)	µg/l	1	ISO 17025	2.9
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01
Total PAH				
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2
Heavy Metals / Metalloids				
Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	13
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	11
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.9
Copper (dissolved)	µg/l	0.7	ISO 17025	8
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	5.5
Zinc (dissolved)	µg/l	0.4	ISO 17025	8.5
Calcium (dissolved)	mg/l	0.012	ISO 17025	23
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0

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Your Order No: POP01075

Lab Sample Number				2530784
Sample Reference				WS2
Sample Number				ES3
Depth (m)				0.90
Date Sampled				09/12/2022
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C5 - C7 HS_1D_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_1D_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_1D_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_MS	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_MS	µg/l	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2530761	TP10	ES1	0.4	Brown clay and sand with chalk and vegetation.
2530762	TP7	ES1	0.65	Brown clay and sand with gravel.
2530763	TP5	ES1	0.2	Brown clay and loam with vegetation.
2530764	TP3	ES1	0.2	Brown loam and clay with gravel and vegetation.
2530765	TP11	ES1	0.1	Brown loam and sand with gravel and rubble.
2530766	TP4	ES1	0.2	Brown loam and clay with brick and chalk.
2530767	TP1	ES1	0.2	Brown clay and loam with gravel and stones.
2530768	TP12	ES1	0.3	Brown sandy clay with stones.
2530769	WS8	ES1	0.6	Brown clay and sand.
2530770	WS6	ES1	0.2	Brown loam and sand with gravel and vegetation.
2530771	WS5	ES1	0.2	Brown loam and clay with gravel and vegetation.
2530772	WS5	ES3	1.6	Light brown clay and sand with gravel.
2530773	WS4	ES1	0.1	Brown loam and clay with gravel and stones.
2530774	WS4	ES2	1	Brown clay and sand with gravel.
2530775	WS2	ES3	0.9	Brown clay and sand.
2530776	WS10	ES1	0.4	Brown clay and sand with gravel and vegetation.
2530777	WS11	ES1	0.2	Brown loam and sand with concrete and vegetation.
2530778	WS1	ES1	1	Brown clay and sand with vegetation.

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Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

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Project / Site name: Kenley Campus

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPHCWG (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Total cyanide in leachate - 1µg/l	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector