

GPE 18/057

Testing & Consultancy Services Ltd
126a High Street,
Old Woking,
Surrey
GU22 9JN



13th June 2018

Dear Albert,

42, Milton Avenue, Waterlooville

We refer to the above project and now have pleasure in enclosing the results of a limited intrusive investigation to determine whether potential contaminants, hydrocarbons SVOCs and VOCs, (semi-volatile and volatile organic compounds) from the former boatbuilders to the east have migrated onto site such that they would pose a risk to the proposed development.

The programme of this investigation comprised the construction of two manually excavated trial pits adjacent to the eastern boundary. The exploratory holes were completed on 4th June 2018 at locations given on the attached plan. Details of the soils revealed are presented on the attached trial pit records. These records also note the results of PID (Photo Ionisation Detector) testing on soil samples from various depths in each trial pit.

An examination of the trial pit records notes the is capped with made ground comprising dark brown clayey topsoil with roots to a depth of 0.25m. Pale brown and grey mottled very silty clay with roots was noted beneath the made ground and the trial pits were terminated within this cohesive stratum, which represents the London Clay, at a depth of 0.70m. During the construction of the trial pits no olfactory or visual evidence of contamination was noted within either trial pit. Groundwater was not encountered during the construction of the trial pits.

PID testing completed on samples from the topsoil and underlying London Clay did not reveal any traces of volatile compounds, with 0ppm being recorded for each test.

Prior to the completion of the trial pits, two samples of the made ground were subject to a background suite of tests in general accordance with current CLEA guidelines. This work was completed by QTS Environmental in their MCERTS and UKAS accredited laboratories. The results of this work are presented with this letter and their positions are noted on the trial pit location drawing.

A comparison of the results with current guidelines for residential land use with plant uptake have not revealed any excess concentrations that would pose a risk to the development.

The soil testing and the subsequent PID testing have not revealed any elevated concentrations of contaminants that would pose a risk to the development. It is therefore concluded that remedial measures will not be required within this development.

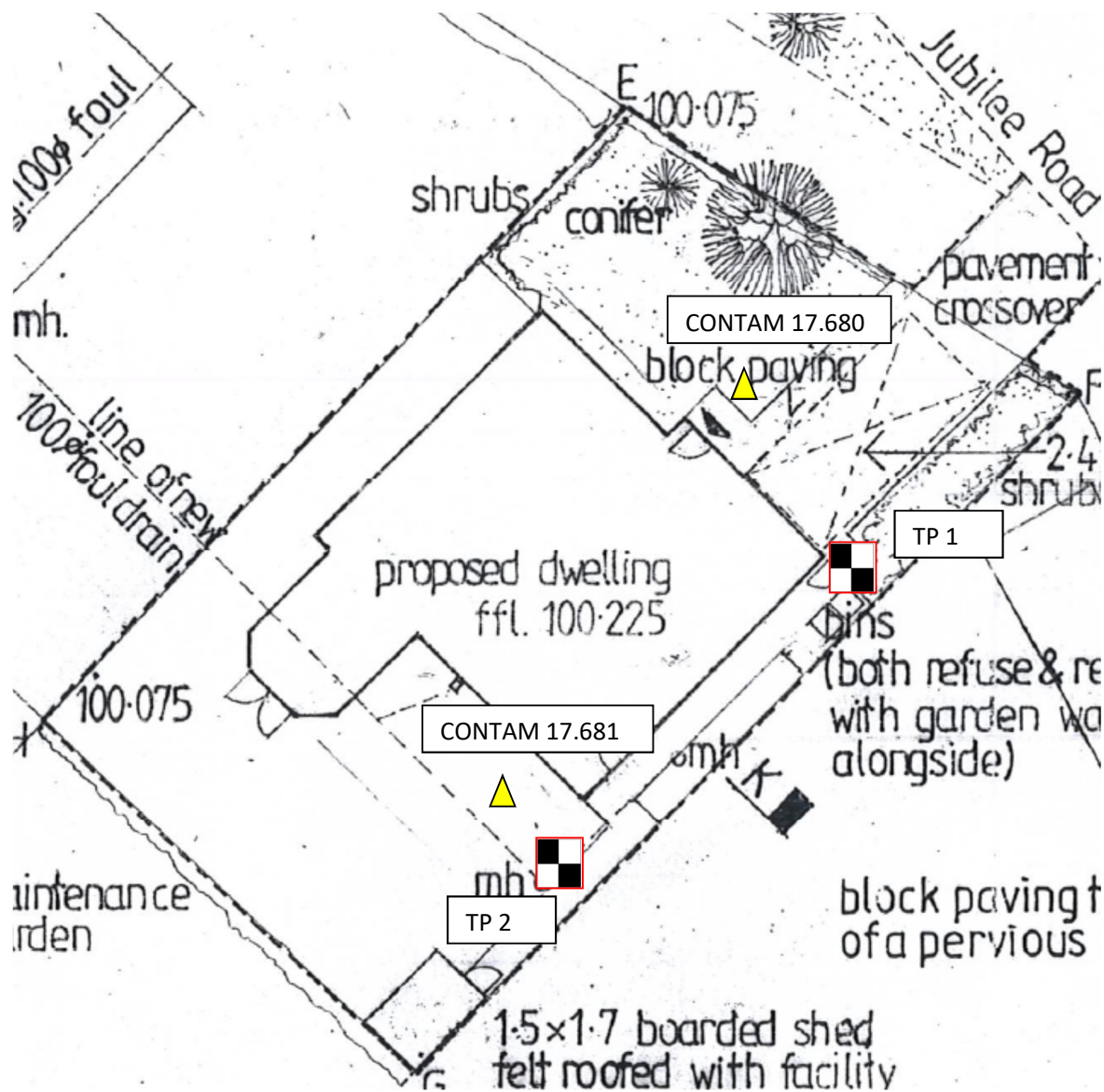
Nevertheless, it is recommended that a watching brief is maintained for any potential sources of contamination during the groundworks phase of this development. Should any suspect materials be encountered they will need to be inspected/sampled so that appropriate remedial measures can be taken if required.

We trust the above provides you with the necessary information to discharge the relevant planning condition, but should you have any further queries please do not hesitate to contact us.

Regards,

A handwritten signature in black ink, appearing to read 'Nigel Milliner', with a stylized flourish at the end.

Nigel Milliner MSc BSc FGS
Director



42, MILTON AVENUE, WATERLOOVILLE

EXPLORATORY LOCATIONS

GEOPROBE ENVIRONMENTAL LTD

DRAWING NO 18/057/1

GEOPROBE ENVIRONMENTAL LTD					Trial Pit No 1	
Contract Milton Avenue, Waterlooville					Report No GPE 18/057	
Client Testing & Consultancy Services Ltd					Date 4/6/18	
Site Address 42, Milton Avenue, Waterlooville, Hampshire, PO7 6AA					Ground Level mOD	
Type of Excavator		Manual		Water level after completion, m		None
Water Strikes, m		Pit Dimensions, m		Ease of Excavation, m		
1 None		Length 0.30		Very Easy ☐		Difficult
2		Breadth 0.30		Moderate ☒		Very hard ☐
Observations: No olfactory or visual evidence of contamination noted within trial pit						
Sample Type	Depth, m	PID, ppm	Depth	Legend	Description	
	0.10	0			Made ground (Dark brown clayey topsoil with frequent roots)	
	0.30	0	0.25		Pale brown and grey mottled very silty CLAY with roots	
	0.60	0				
			0.70		END OF PIT	

Code: D – disturbed sample W – Water sample

GEOPROBE ENVIRONMENTAL LTD					Trial Pit No 2	
Contract Milton Avenue, Waterlooville					Report No GPE 18/057	
Client Testing & Consultancy Services Ltd					Date 4/6/18	
Site Address 42, Milton Avenue, Waterlooville, Hampshire, PO7 6AA					Ground Level mOD	
Type of Excavator		Manual		Water level after completion, m		None
Water Strikes, m		Pit Dimensions, m		Ease of Excavation, m		
1	None	Length	0.30	Very Easy	☐	Difficult
2		Breadth	0.30	Moderate	☒	Very hard ☐
Observations: No olfactory or visual evidence of contamination noted within trial pit						
Sample Type	Depth, m	PID, ppm	Depth	Legend	Description	
	0.10	0			Made ground (Dark brown clayey topsoil with frequent roots)	
	0.30	0	0.25		Pale brown and grey mottled very silty CLAY with roots	
	0.60	0				
			0.70		END OF PIT	

Code: D – disturbed sample W – Water sample



Albert Cole
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t: 01622 850410
russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 17-60834

Site Reference: 42 Milton Road, Waterloooville

Project / Job Ref: 17.680

Order No: 17.680

Sample Receipt Date: 29/06/2017

Sample Scheduled Date: 29/06/2017

Report Issue Number: 2

Reporting Date: 04/04/2018

Authorised by:

Russell Jarvis
Associate Director of Client Services

Authorised by:

Dave Ashworth
Deputy Quality Manager

QTS Environmental is the trading name of DETS Ltd, company registration number 03705645



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Soil Analysis Certificate						
QTS Environmental Report No: 17-60834	Date Sampled	27/06/17				
Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterloooville	TP / BH No	17.680				
Project / Job Ref: 17.680	Additional Refs	None Supplied				
Order No: 17.680	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276702				

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	6.2				
Total Cyanide	mg/kg	< 2	NONE	< 2				
Complex Cyanide	mg/kg	< 2	NONE	< 2				
Free Cyanide	mg/kg	< 2	NONE	< 2				
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3				
Total Sulphate as SO ₄	mg/kg	< 200	NONE	451				
Total Sulphate as SO ₄	%	< 0.02	NONE	0.05				
Elemental Sulphur	mg/kg	< 10	NONE	< 10				
Sulphide	mg/kg	< 5	NONE	12				
Arsenic (As)	mg/kg	< 2	MCERTS	6				
Beryllium (Be)	mg/kg	< 0.5	NONE	< 0.5				
W/S Boron	mg/kg	< 1	NONE	< 1				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2				
Chromium (Cr)	mg/kg	< 2	MCERTS	16				
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				
Copper (Cu)	mg/kg	< 4	MCERTS	18				
Lead (Pb)	mg/kg	< 3	MCERTS	54				
Mercury (Hg)	mg/kg	< 1	NONE	< 1				
Nickel (Ni)	mg/kg	< 3	MCERTS	5				
Selenium (Se)	mg/kg	< 3	NONE	< 3				
Vanadium (V)	mg/kg	< 2	NONE	24				
Zinc (Zn)	mg/kg	< 3	MCERTS	126				
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 17-60834	Date Sampled	27/06/17				
Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterlooville	TP / BH No	17.680				
Project / Job Ref: 17.680	Additional Refs	None Supplied				
Order No: 17.680	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276702				

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1				
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1				
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1				
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6				

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Soil Analysis Certificate - EPH Texas Banded						
QTS Environmental Report No: 17-60834	Date Sampled	27/06/17				
Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterlooville	TP / BH No	17.680				
Project / Job Ref: 17.680	Additional Refs	None Supplied				
Order No: 17.680	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276702				

Determinand	Unit	RL	Accreditation	(n)				
EPH Texas (C6 - C8)	mg/kg	< 0.05	NONE	< 0.05				
EPH Texas (>C8 - C10)	mg/kg	< 1	MCERTS	< 1				
EPH Texas (>C10 - C12)	mg/kg	< 1	MCERTS	< 1				
EPH Texas (>C12 - C16)	mg/kg	< 1	MCERTS	< 1				
EPH Texas (>C16 - C21)	mg/kg	< 1	MCERTS	2				
EPH Texas (>C21 - C40)	mg/kg	< 6	MCERTS	24				
EPH Texas (C6 - C40)	mg/kg	< 6	NONE	26				

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Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 17-60834	
Testing & Consultancy Services Ltd	
Site Reference: 42 Milton Road, Waterlooville	
Project / Job Ref: 17.680	
Order No: 17.680	
Reporting Date: 04/04/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
276702	17.68	None Supplied	0.25	10.4	Brown sandy clay with vegetation and brick

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{4/5}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

QTS Environmental Report No: 17-60834

Testing & Consultancy Services Ltd

Site Reference: 42 Milton Road, Waterlooville

Project / Job Ref: 17.680

Order No: 17.680

Reporting Date: 04/04/2018

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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QTS Environmental Report No: 17-60835

Site Reference: 42 Milton Road, Waterloooville

Project / Job Ref: 17.681

Order No: 17.681

Sample Receipt Date: 29/06/2017

Sample Scheduled Date: 29/06/2017

Report Issue Number: 2

Reporting Date: 04/04/2018

Authorised by:

Russell Jarvis
Associate Director of Client Services

Authorised by:

Dave Ashworth
Deputy Quality Manager

QTS Environmental is the trading name of DETS Ltd, company registration number 03705645



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Soil Analysis Certificate						
QTS Environmental Report No: 17-60835	Date Sampled	27/06/17				
Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterloooville	TP / BH No	17.681				
Project / Job Ref: 17.681	Additional Refs	None Supplied				
Order No: 17.681	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276703				

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	7.6				
Total Cyanide	mg/kg	< 2	NONE	< 2				
Complex Cyanide	mg/kg	< 2	NONE	< 2				
Free Cyanide	mg/kg	< 2	NONE	< 2				
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3				
Total Sulphate as SO ₄	mg/kg	< 200	NONE	340				
Total Sulphate as SO ₄	%	< 0.02	NONE	0.03				
Elemental Sulphur	mg/kg	< 10	NONE	< 10				
Sulphide	mg/kg	< 5	NONE	8				
Arsenic (As)	mg/kg	< 2	MCERTS	6				
Beryllium (Be)	mg/kg	< 0.5	NONE	< 0.5				
W/S Boron	mg/kg	< 1	NONE	< 1				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2				
Chromium (Cr)	mg/kg	< 2	MCERTS	21				
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				
Copper (Cu)	mg/kg	< 4	MCERTS	9				
Lead (Pb)	mg/kg	< 3	MCERTS	21				
Mercury (Hg)	mg/kg	< 1	NONE	< 1				
Nickel (Ni)	mg/kg	< 3	MCERTS	6				
Selenium (Se)	mg/kg	< 3	NONE	< 3				
Vanadium (V)	mg/kg	< 2	NONE	34				
Zinc (Zn)	mg/kg	< 3	MCERTS	40				
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 17-60835	Date Sampled	27/06/17				
Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterlooville	TP / BH No	17.681				
Project / Job Ref: 17.681	Additional Refs	None Supplied				
Order No: 17.681	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276703				

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1				
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1				
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1				
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1				
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1				
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6				

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Soil Analysis Certificate - EPH Texas Banded						
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Testing & Consultancy Services Ltd	Time Sampled	None Supplied				
Site Reference: 42 Milton Road, Waterlooville	TP / BH No	17.681				
Project / Job Ref: 17.681	Additional Refs	None Supplied				
Order No: 17.681	Depth (m)	0.25				
Reporting Date: 04/04/2018	QTSE Sample No	276703				

Determinand	Unit	RL	Accreditation	(n)			
EPH Texas (C6 - C8)	mg/kg	< 0.05	NONE	< 0.05			
EPH Texas (>C8 - C10)	mg/kg	< 1	MCERTS	< 1			
EPH Texas (>C10 - C12)	mg/kg	< 1	MCERTS	< 1			
EPH Texas (>C12 - C16)	mg/kg	< 1	MCERTS	< 1			
EPH Texas (>C16 - C21)	mg/kg	< 1	MCERTS	< 1			
EPH Texas (>C21 - C40)	mg/kg	< 6	MCERTS	< 6			
EPH Texas (C6 - C40)	mg/kg	< 6	NONE	< 6			

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Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 17-60835	
Testing & Consultancy Services Ltd	
Site Reference: 42 Milton Road, Waterloooville	
Project / Job Ref: 17.681	
Order No: 17.681	
Reporting Date: 04/04/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
276703	17.681	None Supplied	0.25	11.7	Brown sandy clay with vegetation

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{4/5}



DETS Ltd
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Soil Analysis Certificate - Methodology & Miscellaneous Information

QTS Environmental Report No: 17-60835

Testing & Consultancy Services Ltd

Site Reference: 42 Milton Road, Waterlooville

Project / Job Ref: 17.681

Order No: 17.681

Reporting Date: 04/04/2018

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

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AR As Received