

Our Ref: 4712,GI

Persimmon Homes
Orion Court
Great Blakenham
Ipswich
Suffolk
IP6 OLW

Date: 16 March 2020

For the attention of Mr James Vine

By Email:

- james.vine@persimmonhomes.com

Dear James

BOYTON PLACE, HAVERHILL ROAD, HAVERHILL, SUFFOLK

1. Introduction

Geosphere Environmental Ltd was commissioned by Persimmon Homes Ltd, the Client, to investigate the suitability of the existing shallow soils at Boyton Place, Haverhill Road, Haverhill, Suffolk for re-use as Topsoil.

2. Site Works

Site works were undertaken on 25 February 2020 and comprised the collection of 22 no. soil samples, taken at an approximate depth of 0.1m bgl. These samples were subsequently dispatched to a UKAS accredited laboratory (Derwentside Environmental Testing Ltd) and subjected to testing in accordance with BS:3882:2015 'Specification for topsoil'.

The locations of the sampling were chosen to give a general spread across the area of the investigation and agreed with the Client prior to undertaking the investigation. For details of sample locations please refer to the Exploratory Hole Location Plan, included within Appendix 2.

3. Testing Results

The soil encountered during sampling was generally consistent with a brown clay noted in all locations. Variable quantities of gravel and roots were also present.

The results of laboratory testing were generally negative, with 21 of the 22 samples testing failing to comply with one or more suitability criteria. The results for TS13 indicate suitability for re- use as 'low fertility' topsoil.

Other observations of note within the testing were that nine of the samples (TS1, TS2, TS3, TS4, TS6, TS8, TS11, TS14 and TS21) only failed the classification of 'low fertility topsoil' on the basis

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that the carbon-nitrogen ration was exceeding 20:1, some by a fine margin, and <2mm visible contaminants when air dried (TS8 was borderline on clay content as well). There may be scope to turn this into a 'low fertility' classification topsoil but a specialist would have to be consulted to determine the financial or practical feasibility of this.

Five samples exhibited too much clay, sometimes in addition to the issues noted above and the remaining samples failed to classify as any form of topsoil on multiple different parameters.

Results from laboratory testing are detailed in full within lab report number 20-02527, included within Appendix 3.

Yours sincerely



Peter Coyne
Technical Assistant
Geosphere Environmental Ltd
peter@geosphere-environmental.co.uk

Enclosures:

Appendix 1 - Report Limitations and Conditions

Appendix 2 – Drawings

Appendix 3 - Laboratory Testing Results



APPENDICES



Appendix 1 – Report Limitations and Conditions

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report has been prepared for the sole use of the Client for the purposes described and no extended duty of care to any third party is implied or offered. Third parties using any information contained within this report do so at their own risk.

This report is prepared and written for the use stated herein; it should not be used for any other purposes without reference to Geosphere Environmental Limited. The report has been prepared in relation to the proposed end-use should another end-use be intended a further re-assessment may be required. It is likely that over time practises will improve and the relevant guidance and legislation be amended or superseded, which may necessitate a re-assessment of the site.

The accuracy of any map extracts cannot be guaranteed. It is possible that different conditions existed onsite, between and subsequent to the various map surveys appended.

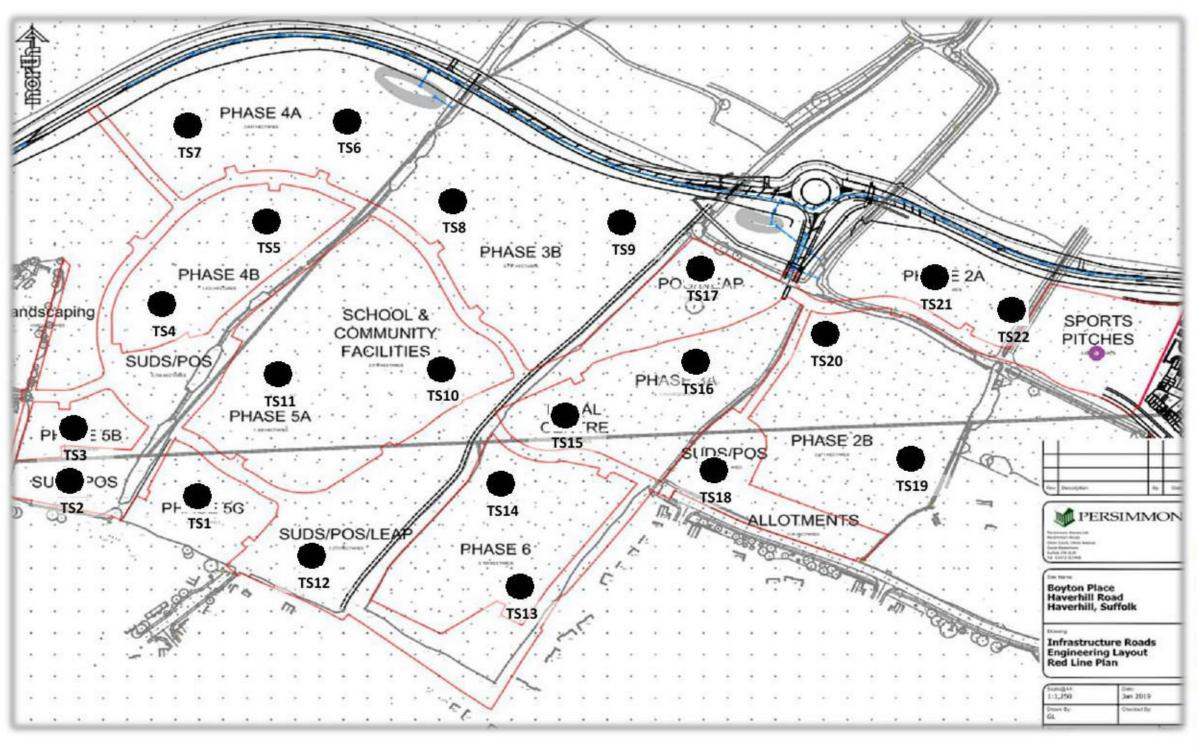
Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes discussed or on the possible presence of features based upon visual, verbal or published evidence, this is for guidance only and no liability can be accepted for its accuracy.



Appendix 2 - Drawings

Exploratory Hole Location Plan - Drawing ref. 4712,GI/001/Rev0

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LEGEND

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Sampling location

SOURCE

Client provided

PROJECT

Boyton Place, Haverhill Road, Haverhill, Suffolk

TITLE

Exploratory Hole Location Plan

DRAWING NUMBER

4712,GI/001/Rev0

SCALE

DATE

As marked

12/03/2020

DRAWN BY

CHECKED BY

PC

TP



Appendix 3 – Laboratory Testing Results

DETS report number. 20-02527.1





Peter Coyne Geosphere Environmental Ltd Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ **DETS Ltd**

Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 20-02527

Site Reference: Boyton Place, Haverhill

Project / Job Ref: 4712,GI

Order No: None Supplied

Sample Receipt Date: 26/02/2020

Sample Scheduled Date: 26/02/2020

Report Issue Number: 1

Reporting Date: 10/03/2020

Authorised by:

Ela Mysiara Quality Manager

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.





DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	al Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS1	g.		>		
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplie	d	Depth (m)	0.10	Multip	Ac	Low F	Calca	
Reporting Date: 10/03/	2020	DETS Sample No	465191					
Determinand	Reporting Unit	RL						
Soil Texture								
Clay Content (S)	%	N/a	16.0	<u> </u>	5 -	35		
Silt Content (S)	%	N/a	18.0	0 - 65				
Sand Content (S)	%	N/a	66.0	30 - 85				
Textural Class (S)	N/a	N/a	Sandy Loam					
				Clay Content 5 - 20%				
Locs on Tanition	%	< 0.01	4.90	3 - 20 3 - 30 2 - 20			3 - 20	
Loss on Ignition	70	< 0.01	4.90		Clay Conter	nt 20 - 35%	251	
				5 - 20	- 20 5 - 30 2 - 20 5			
Coarse Fragment Conte	nt							
>2mm ^(S)	%	N/a	5.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.5	5.5 - 8.5	3.5 - 5.5 3.5 - 9.0		7.5 - 9.0	
Carbonate	%	< 0.1	3.4		(A)		> 1	
Available Plant Nutrient	s							
Total Nitrogen ^(S)	%	< 0.01	0.05	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable)	mg/l	< 3	6	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable)	mg/l	< 20	140	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	170	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)	:1	< 0.1	42.0	< 20:1	< 20:1	< 20:1	< 20:1	
Exchangeable Sodium ^(S)	%	< 0.1	< 0.1	2				
Phytotoxic Elements (by	soil pH)			Multipurpos	se & Specific ran		psoils at p	
			- 73	< 6.0	6.0	- 7.0	> 7.0	
Zinc MU	mg/kg	< 3	56	< 200	< 2		< 300	
Copper MU	mg/kg	< 4	16	< 100		135	< 200	
Nickel MU	mg/kg	< 3	20	< 60	<	75	< 110	
Visible Contaminants (A								
>2mm	%	N/a	3.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	0				
Additional Analytes	no-man Lie	No. 7.						
Available Sodium (S)	mg/l	< 1	39					
Available Calcium (S)	mg/l	< 1	3900	2222		1		
Electrical Conductivity	uS/cm	< 5	1478	3300				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepencies with current legislation

M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test





BS3882 Topsoil Suite								
DETS Report No: 20-025	27	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	al Ltd	Time Sampled	None Supplied					
Site Reference: Boyton I	Place, Haverhill	TP / BH No	TS2	Se		t,	<u>s</u>	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplied	1	Depth (m)	0.10	Multi	Ă	Low	Calc	
Reporting Date: 10/03/	2020	DETS Sample No	465192					
Determinand	Reporting Unit	RL						
Soil Texture	-							
Clay Content (S)	%	N/a	7.0	5 - 35				
Silt Content (S)	%	N/a	11.0		0 -	65		
Sand Content (S)	%	N/a	82.0		30	- 85		
Textural Class (S)	N/a	N/a	Loamy Sand	19				
				Clay Content 5 - 20%				
Loss on Tanition	%	< 0.01	4.00	3 - 20 3 - 30 2 - 20 3 -				
Loss on Ignition	%	< 0.01	4.00		Clay Conte	nt 20 - 35%		
				5 - 20	5 - 30	5 - 20		
Coarse Fragment Conter	nt							
>2mm ^(S)	%	N/a	6.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.0	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	1.1				> 1	
Available Plant Nutrient	S							
Total Nitrogen (S)	%	< 0.01	0.07	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable) (S)	mg/l	< 3	6	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable) (S)	mg/l	< 20	150	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	180	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)	:1	< 0.1	32.0	< 20:1	< 20:1	< 20:1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2				
Phytotoxic Elements (by	soil pH)			Multipurpos		nge	psoils at pH	
			- 75	< 6.0	6.0	- 7.0	> 7.0	
Zinc MU	mg/kg	< 3	47	< 200		200	< 300	
Copper MU	mg/kg	< 4	14	< 100		135	< 200	
Nickel MU	mg/kg	< 3	16	< 60	< 60 < 75 < 1			
Visible Contaminants (A		22.						
>2mm	%	N/a	0.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	0				
Additional Analytes	05-1532 Nr 1 275	18.00.20		-				
Available Sodium (S)	mg/l	< 1	43					
Available Calcium (S)	mg/l	< 1	4000	2222				
Electrical Conductivity	uS/cm	< 5	1426	3300				
OVERALL COMPLIANOV				NI NI	NI NI	NI.	N1	
OVERALL COMPLIANCY				N	N	N	N	

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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	al Ltd	Time Sampled	None Supplied					
Site Reference: Boyton I	Place, Haverhill	TP / BH No	TS3	es S		£	s	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplied	d	Depth (m)	0.10	Multij	¥	Low	Calc	
Reporting Date: 10/03/	2020	DETS Sample No	465193					
Determinand	Reporting Unit	RL						
Soil Texture	-							
Clay Content (S)	%	N/a	24.0	5 - 35				
Silt Content (S)	%	N/a	32.0		0 -	65		
Sand Content (S)	%	N/a	44.0		30	- 85		
Textural Class (S)	N/a	N/a	Clay Loam	194				
				Clay Content 5 - 20%				
Lancas Tamihian	0/	4.0.01	2.00	3 - 20 3 - 30 2 - 20 3 -				
Loss on Ignition	%	< 0.01	3.90		Clay Conter	nt 20 - 35%		
				5 - 20	5 - 30	5 - 20		
Coarse Fragment Conter	nt							
>2mm ^(S)	%	N/a	0.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.1	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	1.0		1 = 1 1 3 3 3 1		>1	
Available Plant Nutrient	S							
Total Nitrogen (S)	%	< 0.01	0.03	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable) (S)	mg/l	< 3	6	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable)	mg/l	< 20	130	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	170	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)	:1	< 0.1	63.0	< 20:1	< 20:1	< 20:1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.				
Phytotoxic Elements (by	soil pH)			Multipurpos	se & Specific rar	nge	psoils at pH	
			15	< 6.0	6.0	- 7.0	> 7.0	
Zinc MU	mg/kg	< 3	54	< 200		200	< 300	
Copper MU	mg/kg	< 4	14	< 100	17.0	135	< 200	
Nickel MU	mg/kg	< 3	17	< 60				
Visible Contaminants (A		- 800 ·						
>2mm	%	N/a	5.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	0				
Additional Analytes	S SERVICE EX	New Section 1	7.414th					
Available Sodium (S)	mg/l	< 1	61					
Available Calcium (S)	mg/l	< 1	3900					
Electrical Conductivity	uS/cm	< 5	1475	3300				
OVERALL COMPLIANOV				NI	M	NI	N	
OVERALL COMPLIANCY				N	N	N	N	

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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	tal Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS4	şe.		ţ	<u>s</u>	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplie	d	Depth (m)	0.10	Multi	Ā	Low	Calc	
Reporting Date: 10/03/	2020	DETS Sample No	465194					
Determinand	Reporting Unit	RL						
Soil Texture								
Clay Content (S)	%	N/a	23.0		5 - 35			
Silt Content (S)	%	N/a	41.0		0 -	65		
Sand Content (S)	%	N/a	36.0		30	- 85		
Textural Class (S)	N/a	N/a	Clay Loam		53	-		
	8			3 8	Clay Content 5 - 20%			
Less on Ignition	0/-	< 0.01	4.10	3 - 20	3 - 30 2 - 20 3 - 2			
Loss on Ignition	%	< 0.01	4.10		Clay Content 20 - 35%			
			<u></u>	5 - 20	5 - 30	2 - 20	5 - 20	
Coarse Fragment Conte	nt							
>2mm ^(S)	%	N/a	1.0	0 - 30	0 - 30	0 - 30 0 - 30		
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 30 0 - 10	
>50mm (S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.2	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	1.2		TE TO A STATE OF		> 1	
Available Plant Nutrient								
Total Nitrogen (S)	%	< 0.01	0.03	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable)	mg/l	< 3	6	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable)	mg/l	< 20	150	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	170	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (5)	:1	< 0.1	69.0	< 20:1	< 20 : 1	< 20 : 1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2				
Phytotoxic Elements (by	y soil pH)					Purpose To		
Zinc ^{MU}	mg/kg	< 3	54	< 6.0 < 200		200	> 7.0 < 300	
	127 2							
Copper MU	mg/kg	< 4	14	< 100	1000	135	< 200	
Nickel MU	mg/kg	< 3	18	< 60	< 75 < 1			
Visible Contaminants (A		NU-	2.0					
>2mm	%	N/a	3.0	< 0.5 < 0.25				
Plastics	%	N/a	0.00					
Sharps Additional Analytes	%	N/a	0.0	2	2	0		
	n n	1 22 1	45		_			
Available Sodium (S)	mg/l	< 1	45		-			
Available Calcium (S) Electrical Conductivity	mg/l uS/cm	< 1 < 5	4500	2200				
Electrical Conductivity	uS/CIII	< 5	1384	3300				
OVERALL COMPLIANCY				N	N	N	N	

OVERALL COMPLIANCY
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DETS Report No: 20-025	27	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton I	Place, Haverhill	TP / BH No	TS5 None Supplied 0.10	Multipurpose		Low Fertility	Calcareous
Project / Job Ref: 4712,	GI	Additional Refs			Acidic		
Order No: None Supplied	1	Depth (m)					
Reporting Date: 10/03/	2020	DETS Sample No	465195				
Determinand	Reporting Unit	RL					
Soil Texture	4122						
Clay Content (S)	%	N/a	40.0	5 - 35			
Silt Content (S)	%	N/a	39.0	0 - 65			
Sand Content (S)	%	N/a	21.0	30 - 85			
Textural Class (S)	N/a	N/a	Clay				
				Clay Content 5 - 20%			
Loss on Ignition	%	< 0.01	6.00	3 - 20 3 - 30 2 - 20		3 - 20	
LOSS OH IGHIUOH	70	< 0.01	0.00		Clay Conter	t 20 - 35%	8
				5 - 20	20 5 - 30 2 - 20 5		
Coarse Fragment Conter	nt						
>2mm ^(S)	%	N/a	1.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.3	5.5 - 8.5	3.5 - 5.5 3.5 - 9.0		7.5 - 9.0
Carbonate	%	< 0.1	0.9		(A)		>1
Available Plant Nutrient							
Total Nitrogen ^(S)	%	< 0.01	0.03	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	4	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	140	121 - 1500	121 - 1500		121 - 150
Magnesium (Extractable)	mg/l	< 1	160	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	81.0	< 20:1	< 20:1	< 20 : 1	< 20:1
Exchangeable Sodium ^(S)	%	< 0.1	< 0.1				-Circ i
Phytotoxic Elements (by	soil pH)			Multipurpos	se & Specific ran		psoils at p
			17	< 6.0	6.0 -	7.0	> 7.0
Zinc ^{MU}	mg/kg	< 3	63	< 200	< 2		< 300
Copper MU	mg/kg	< 4	15	< 100	< 1		< 200
Nickel MU	mg/kg	< 3	23	< 60	<	75	< 110
Visible Contaminants (A		200			5173	\ F	
>2mm	%	N/a	0.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	0			
Additional Analytes	76-1827 Line	No. 7. 42					
Available Sodium (S)	mg/l	< 1	36				
Available Calcium (S)	mg/l	< 1	4000	32524885			
Electrical Conductivity	uS/cm	< 5	1394	3300	1		

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Subcontracted analysis (S)





BS3882 Topsoil Suite Compliance with Range DETS Report No: 20-02527 Date Sampled 25/02/2020 Geosphere Environmental Ltd Time Sampled None Supplied Site Reference: Boyton Place, Haverhill TP / BH No TS6 Low Fertility Calcareous Acidic Project / Job Ref: 4712,GI Additional Refs None Supplied Order No: None Supplied 0.10 Depth (m) **DETS Sample** Reporting Date: 10/03/2020 465196 No Determinand Reporting Unit RL Soil Texture Clay Content (S) 5 - 35% N/a 19.0 Silt Content (S) % 0 - 65 N/a 25.0 30 - 85 Sand Content (S) % N/a 56.0 Textural Class (S) Sandy Clay Loam N/a N/a Clay Content 5 - 20% 3 - 30 3 - 202 - 203 - 20 Loss on Ignition % < 0.01 3.90 Clay Content 20 - 35% 5 - 205 - 30 2 - 205 - 20 Coarse Fragment Content >2mm (S) % 0 - 300 - 300 - 300 - 30 N/a 5.0 >20mm (S) % N/a 0 - 10 0 - 10 0 - 100 - 10 0.0 >50mm (S) % 0.0 N/a 0 pH Units 7.9 N/a 5.5 - 8.53.5 - 5.5 3.5 - 9.07.5 - 9.0 % < 0.1 5.4 > 1 Carbonate **Available Plant Nutrients** Total Nitrogen (S) % < 0.01 0.03 ≥ 0.15 ≥ 0.15 ≥ 0.15 Phosphorus (Extractable) < 3 6 mg/l 16 - 140 16 - 140 ≤ 15 16 - 140 Potassium (Extractable) 121 - 1500 121 - 1500 121 - 1500 mg/l < 20 120 Magnesium (Extractable) mg/l < 1 130 51 - 600 51 - 600 51 - 600 < 20:1 Carbon / Nitrogen Ratio (S) :1 < 0.1 74.0 < 20:1 < 20:1 < 20:1 < 0.1 Exchangeable Sodium (S) < 0.1 Multipurpose & Specific Purpose Topsoils at pH Phytotoxic Elements (by soil pH) range 6.0 - 7.0< 6.0 > 7.0 Zinc MU < 300 < 200 51 < 200 Copper MU mg/kg < 4 14 < 100 < 135 < 200 Nickel Mu mg/kg < 3 23 < 60 < 75 < 110 Visible Contaminants (Air Dried Soil) 5.0 < 0.5 N/a 0.00 < 0.25 % **Plastics** N/a Sharps 0 % 0.0 N/a Additional Analytes Available Sodium (S) 30 mg/l < 1 Available Calcium (S) 3600 mg/l < 1 Electrical Conductivity uS/cm < 5 1389 3300 OVERALL COMPLIANCY N N N

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DETS Report No: 20-0252	77	Date Sampled	25/02/2020	10	Compliance	with Range	
DETO REPORT NOT 20 0200	.,	Date Sampled	23/02/2020	<u></u>	Compilation	With Runge	
Geosphere Environmenta	il Ltd	Time Sampled	None Supplied				
Site Reference: Boyton P	lace, Haverhill	TP / BH No	TS7	es S		₽	ر س
Project / Job Ref: 4712,G	iI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplied		Depth (m)	0.10	Multig	Ac	Low F	Calg
Reporting Date: 10/03/2	:020	DETS Sample No	465197			and out that	
Determinand	Reporting Unit	RL				-	
Soil Texture							
Clay Content (S)	%	N/a	29.0	3	5 -		
Silt Content (S)	%	N/a	40.0		0 -	65	
Sand Content (S)	%	N/a	31.0		30 - 85		
Textural Class (S)	N/a	N/a	Clay Loam		534	-	
8.3				. 9	Clay Content 5 - 20%		
Loss on Ignition	%	< 0.01	3.80	3 - 20	3 - 30 2 - 20 3 - 2		
LOSS ON IGNICION	70	< 0.01	3.00		Clay Content 20 - 35%		
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Content	t						
>2mm ^(S)	%	N/a	1.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.9	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	2.8		FIRE		> 1
Available Plant Nutrients							
Total Nitrogen (S)	%	< 0.01	0.14	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	26	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	250	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	97	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	23.0	< 20:1	< 20 : 1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2			
Phytotoxic Elements (by	soil pH)			Multipurpos		nge	psoils at pH
		_		< 6.0	6.0	- 7.0	> 7.0
Zinc ^{MU}	mg/kg	< 3	51	< 200		200	< 300
Copper MU	mg/kg	< 4	14	< 100		135	< 200
Nickel MU	mg/kg	< 3	21	< 60	<	75	< 110
Visible Contaminants (Air		_	50.30				
>2mm	%	N/a	0.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	2	(0	
Additional Analytes							4
Accellable Cadicas (S)	mg/l	< 1	26				
Available Sodium (S)	7.7.7.7			-	-		
Available Calcium (S) Electrical Conductivity	mg/l uS/cm	< 1 < 5	4800	3300			

OVERALL COMPLIANCY
Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Subcontracted analysis (S)

N

N

N

M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test





BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	tal Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS8	98		£	v
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)	0.10	Multi	AC	Low	Calc
Reporting Date: 10/03/	2020	DETS Sample No	465198				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	36.0	3			
Silt Content (S)	%	N/a	34.0		0 -	65	
Sand Content (S)	%	N/a	30.0		30	- 85	
Textural Class (S)	N/a	N/a	Clay		19		
				Clay Content 5 - 20%			
I on Innition	0/	z 0.01	4 50	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	4.50		Clay Conter	nt 20 - 35%) E1
				5 - 20			5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	5.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.9	5.5 - 8.5	3.5 - 5.5 3.5 - 9.0		7.5 - 9.0
Carbonate	%	< 0.1	2.6	7/A 1933			> 1
Available Plant Nutrient	S						
Total Nitrogen (S)	%	< 0.01	0.15	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	27	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable) (S)	mg/l	< 20	280	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	<1	110	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)		< 0.1	22.0	< 20:1	< 20 : 1	< 20 : 1	< 20:1
Exchangeable Sodium (S) Phytotoxic Elements (b)	% y soil pH)	< 0.1	< 0.1			nge	
Zinc ^{MU}	mg/kg	< 3	58	< 6.0 < 200	08500574	- 7.0 200	> 7.0 < 300
	100/00					135	
Copper MU	mg/kg	< 4	15	< 100	1000		< 200
Nickel ^{MU} Visible Contaminants (A	mg/kg	< 3	24	< 60	_	75	< 110
		NVa	0.0	-		0.5	
>2mm	%	N/a	0.0	< 0.5			
Plastics		N/a		< 0.25 0			
Sharps Additional Analytes	%	N/a	0.0	2		,	
	ma/l	< 1	61	+			
Available Sodium ^(S) Available Calcium ^(S)	mg/l mg/l	<1	5300				
Electrical Conductivity	uS/cm	< 5	1412	3300			
	113/1311	> 3)	1417	2 2000	. ,	4	

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DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	tal Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS9 None Supplied 0.10 465199	Multipurpose		>	
Project / Job Ref: 4712,	GI	Additional Refs			Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)					
Reporting Date: 10/03/	2020	DETS Sample No				995-94-03	
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	28.0	5 - 35			
Silt Content (S)	%	N/a	25.0	0 - 65			
Sand Content (S)	%	N/a	47.0	30 - 85			
Textural Class (S)	N/a	N/a	Clay Loam	1.4			
	8			Clay Content 5 - 20%			
	0/	. 0.01	4.20	3 - 20 3 - 30 2 - 20			3 - 20
Loss on Ignition	%	< 0.01	4.30		Clay Conter	nt 20 - 35%	25
				5 - 20			
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	10.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	8.0	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	4.2				> 1
Available Plant Nutrient	s						
Total Nitrogen ^(S)	%	< 0.01	0.15	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/I	< 3	25	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	290	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/I	< 1	110	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	22.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.			
Phytotoxic Elements (by	y soil pH)			Multipurpos	se & Specific rar	Purpose To	psoils at pl
(4)				< 6.0	6.0	- 7.0	> 7.0
Zinc ^{MU}	mg/kg	< 3	48	< 200		200	< 300
Copper MU	mg/kg	< 4	15	< 100		135	< 200
Nickel MU	mg/kg	< 3	24	< 60	<	75	< 110
Visible Contaminants (A							
>2mm	%	N/a	2.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	2		0	
Additional Analytes	1000000	N					
Available Sodium (S)	mg/l	< 1	45				
Available Calcium ^(S) Electrical Conductivity	mg/l	< 1	5500				
- In atrianal Canadi interior	uS/cm	< 5	1430	3300			

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BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS10	g		Α.	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	iodino	Acidic	ertilit	Calcareous
Order No: None Supplie	d	Depth (m)	0.10	Multipurpose	Aci	Low Fertility	Calca
Reporting Date: 10/03/	2020	DETS Sample No	465200			00 4000	
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	23.0		•		
Silt Content (S)	%	N/a	19.0			35 65	
Sand Content (S)	%	N/a	58.0			- 85	
Textural Class (S)	N/a	N/a	Sandy Clay Loam				
				8	Clay Conte	nt 5 - 20%	
	744	100000	19012021	3 - 20 3 - 30 2 - 20			3 - 20
Loss on Ignition	%	< 0.01	4.30			nt 20 - 35%	
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	8.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	4.4	5.5 0.5	160000	0.5 5.0	> 1
Available Plant Nutrient							
Total Nitrogen (S)	%	< 0.01	0.15	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	18	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	280	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	110	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	22.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2			
Phytotoxic Elements (by	soil pH)		ž-	Multipurpos	se & Specific rar	Purpose To	psoils at pH
10			- T-	< 6.0	6.0	- 7.0	> 7.0
Zinc MU	mg/kg	< 3	56	< 200		200	< 300
Copper MU	mg/kg	< 4	18	< 100		135	< 200
Nickel MU	mg/kg	< 3	28	< 60	<	75	< 110
Visible Contaminants (A			2,000				
>2mm	%	N/a	3.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	0			
Additional Analytes	occess to Eve	No. of					
Available Sodium (S)	mg/l	< 1	45				
Available Calcium (S)	mg/l	< 1	5000				
Electrical Conductivity	uS/cm	< 5	1156	3300			
OVERALL COMPLIANCY				N	N	N	N
	and the second of the second o		The second secon		2.7	127.7	. 7. 7.

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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	al Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS11	9		ž:	ω,	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	soduno	Acidic	Low Fertility	Calcareous	
Order No: None Supplie	d	Depth (m)	0.10	Multipurpose	Aci	Low F	Calca	
Reporting Date: 10/03/	2020	DETS Sample No	465201			00 4140		
Determinand	Reporting Unit	RL						
Soil Texture	***		•			i e		
Clay Content (S)	%	N/a	31.0		5 - 35			
Silt Content (S)	%	N/a	30.0		0 -	65		
Sand Content (S)	%	N/a	39.0		30	- 85		
Textural Class (S)	N/a	N/a	Clay Loam	-				
	8			Clay Content 5 - 20%				
	04	0.04	4.00	3 - 20	3 - 20 3 - 30 2 - 20 3			
Loss on Ignition	%	< 0.01	4.20		Clay Content 20 - 35%			
				5 - 20	5 - 30			
Coarse Fragment Conte	nt							
>2mm ^(S)	%	N/a	12.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10 0 - 10		0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.7	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	4.2		VE 1 1 1 1 1 1		> 1	
Available Plant Nutrient								
Total Nitrogen (S)	%	< 0.01	0.16	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable)	mg/l	< 3	15	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable)	mg/l	< 20	210	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	<1	82	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (5)	:1	< 0.1	23.0	< 20:1	< 20 : 1	< 20:1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2		700		
Phytotoxic Elements (by	/ soil pH)		2	Multipurpos	se & Specific rar	Purpose To	psoils at pH	
				< 6.0	6.0	- 7.0	> 7.0	
Zinc ^{MU}	mg/kg	< 3	53	< 200		200	< 300	
Copper MU	mg/kg	< 4	16	< 100		135	< 200	
Nickel MU	mg/kg	< 3	23	< 60	< 75 <			
Visible Contaminants (A		300						
>2mm	%	N/a	2.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	0				
Additional Analytes	5 (20) (1 1 <u>1</u> 1 1	18,000						
Available Sodium (S)	mg/l	< 1	36					
Available Calcium (S)	mg/l	< 1	4200	2000				
Electrical Conductivity	uS/cm	< 5	1468	3300				
OVERALL COMPLIANCY				N	N	N	N	

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BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS12	es es		£	_s
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)	0.10	Multi	AC	Low	Calc
Reporting Date: 10/03/	2020	DETS Sample No	465202				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	28.0		5 -	35	
Silt Content (S)	%	N/a	28.0	0 - 65			
Sand Content (S)	%	N/a	44.0	30 - 85			
Textural Class (S)	N/a	N/a	Clay Loam				
					Clay Conte	nt 5 - 20%	
Loss on Ignition	%	< 0.01	4.40	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	70	< 0.01	7.70		Clay Conte	nt 20 - 35%	
				5 - 20	5 - 30 2 - 20		5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	24.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	14.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0 0	
pH ^{MU}	pH Units	N/a	8.0	5.5 - 8.5	3.5 - 5.5 3.5 - 9.0		7.5 - 9.0
Carbonate	%	< 0.1	4.2		CED COLOR		> 1
Available Plant Nutrient	s						
Total Nitrogen (S)	%	< 0.01	0.17	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable) (S)	mg/l	< 3	13	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	210	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	83	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	20.0	< 20:1	< 20:1	< 20 : 1	< 20 : 1
Exchangeable Sodium (S) Phytotoxic Elements (by	% / soil pH)	< 0.1	< 0.1			nge	
Zinc ^{MU}	mg/kg	< 3	52	< 6.0 < 200	1,000,000	- 7.0 200	> 7.0 < 300
III N. C.	100/10	< 4				135	
Copper ^{MU} Nickel ^{MU}	mg/kg	< 3	16 23	< 100		75	< 200
Visible Contaminants (A	mg/kg	```	23	< 60		/3	< 110
>2mm	%	N/a	5.0	<u> </u>		0.5	
	%	10.000	0.00	< 0.5			
Plastics Sharps	%	N/a N/a	0.00	< 0.25 0			
Sharps Additional Analytes	70	N/a	0.0	2			
Available Sodium (S)	mall	< 1	31				
Available Calcium (S)	mg/l mg/l	<1	4400		-		
Electrical Conductivity	uS/cm	< 5	1432	3300	- 8		
	uo/oili	- 0	1732	2200			

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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020	2	Compliance	with Range		
Geosphere Environment	al Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS13	se		ţ.	v	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplied	d	Depth (m)	0.10	Multi	Ä	Low	Calc	
Reporting Date: 10/03/	2020	DETS Sample No	465203					
Determinand	Reporting Unit	RL						
Soil Texture	-							
Clay Content (S)	%	N/a	19.0) 1—	5 - 35			
Silt Content (S)	%	N/a	24.0		0 -	65		
Sand Content (S)	%	N/a	57.0		30	- 85		
Textural Class (S)	N/a	N/a	Sandy Clay Loam	m -				
			-	Clay Content 5 - 20%				
Lancas Tamihian	0/	. 0.01	4.60	3 - 20	3 - 20 3 - 30 2 - 20 3			
Loss on Ignition	%	< 0.01	4.60		Clay Conter	nt 20 - 35%	9	
				5 - 20	5 - 30	5 - 20		
Coarse Fragment Conter	nt							
>2mm ^(S)	%	N/a	7.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm (S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	4.6		1 = 0 10 x 3		> 1	
Available Plant Nutrient	S							
Total Nitrogen (S)	%	< 0.01	0.19	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable) (S)	mg/l	< 3	11	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable) (S)	mg/l	< 20	200	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	83	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)	:1	< 0.1	18.0	< 20:1	< 20 : 1	< 20 : 1	< 20 : 1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.				
Phytotoxic Elements (by	soil pH)		÷	Multipurpos	se & Specific rar		psoils at pH	
			37	< 6.0	6.0	- 7.0	> 7.0	
Zinc ^{MU}	mg/kg	< 3	50	< 200		200	< 300	
Copper MU	mg/kg	< 4	16	< 100	17.0	135	< 200	
Nickel MU	mg/kg	< 3	19	< 60	<	75	< 110	
Visible Contaminants (A								
>2mm	%	N/a	0.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	0				
Additional Analytes								
Available Sodium (S)	mg/l	< 1	31					
Available Calcium (S)	mg/l	< 1	4300	32:290.59				
Electrical Conductivity	uS/cm	< 5	1464	3300				
				0 1201	5242	5 50250	22	
OVERALL COMPLIANCY				N	N	Y	N	

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DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS14	Se		ty	v
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplied	d	Depth (m)	0.10	Multi	A	Low	Calc
Reporting Date: 10/03/	2020	DETS Sample No	465204				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	22.0	\$	5 -	35	111
Silt Content (S)	%	N/a	23.0	0 - 65			
Sand Content (S)	%	N/a	55.0	30 - 85			
Textural Class (S)	N/a	N/a	Sandy Clay Loam		0		
	8		8	3	Clay Conte	nt 5 - 20%	
Loss on Ignition	%	< 0.01	4.70	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	70	< 0.01	4.70		Clay Conter	t 20 - 35%	20
	0			5 - 20	5 - 20 5 - 30 2 - 20		
Coarse Fragment Conter	nt						
>2mm ^(S)	%	N/a	10.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	4.6		(A)		> 1
Available Plant Nutrient	s						
Total Nitrogen ^(S)	%	< 0.01	0.17	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	5	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	83	121 - 1500	121 - 1500		121 - 150
Magnesium (Extractable)	mg/l	< 1	30	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	22.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	Multipurpos	se & Specific	Purpose To	psoils at p
Phytotoxic Elements (by	soil pH)			< 6.0	ran 6.0 -	-	> 7.0
Zinc ^{MU}	mg/kg	< 3	48	< 200	< 2	2000	< 300
Copper ^{MU}	mg/kg	< 4	15	< 100	< 1	.35	< 200
Nickel ^{MU}	mg/kg	< 3	22	< 60	<		< 110
Visible Contaminants (A						Maria -	
>2mm	%	N/a	5.0	7	< ().5	
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	2	(
Additional Analytes	70		0.0	÷			
Available Sodium (S)	mg/l	< 1	9				
Available Calcium ^(S)	mg/l	<1	1600				
Electrical Conductivity	uS/cm	< 5	1516	3300		·	1

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Subcontracted analysis (S)





BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020	9	Compliance	with Range	
Geosphere Environment	tal Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS15	şe .		ţ,	<u> </u>
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplied	d	Depth (m)	0.10			Low	
Reporting Date: 10/03/	2020	DETS Sample No	465205				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	37.0	SE	5 -	35	
Silt Content (S)	%	N/a	36.0		0 -	65	
Sand Content (S)	%	N/a	27.0	30 - 85			
Textural Class (S)	N/a	N/a	Clay		53	4	
	8				Clay Conte	nt 5 - 20%	
tee on Ignition	0/-	< 0.01	3 50	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	3.50		Clay Conte	nt 20 - 35%	ya
		L		5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	12.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm (S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.9	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	4.4		TE TO SE		> 1
Available Plant Nutrient							
Total Nitrogen (S)	%	< 0.01	0.18	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	21	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	220	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	82	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	20.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.			
Phytotoxic Elements (by	y soil pH)			Multipurpose & Specific Purpose Topsoils at pl			
Zinc ^{MU}	mg/kg	< 3	53	< 6.0 < 200		- 7.0 200	> 7.0 < 300
Copper MU	mg/kg	< 4	17	< 100		135	< 200
Nickel MU	mg/kg	< 3	23	< 60		75	< 110
Visible Contaminants (A	Control of the second s	- 0	23	< 00		/3	< 110
>2mm	%	N/a	2.0			0.5	
Plastics	%	N/a	0.00			0.25	
	%	+	0.00			0	
Sharps Additional Analytes	70	N/a	0.0	2	78	U	
Available Sodium (S)	ma/l	< 1	38			r	1
Available Sodium (S)	mg/l	<1	4300				
Available Calcium (S) Electrical Conductivity	mg/l uS/cm	< 5	1470	3300			
Electrical Corludctivity	u3/cm	~ 3	1470	3300	-		
OVERALL COMPLIANCY				l N	N	N	N

OVERALL COMPLIANCY
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BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	tal Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS16	Se		ţ.	<u> </u>
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)	0.10			Low	Calc
Reporting Date: 10/03/	2020	DETS Sample No	465206				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	26.0	90	5 -	35	
Silt Content (S)	%	N/a	25.0		0 -	65	
Sand Content (S)	%	N/a	49.0		30	- 85	
Textural Class (S)	N/a	N/a	Clay Loam		53	-	
	8			3	Clay Conte	nt 5 - 20%	
tee on Ignition	0/-	< 0.01	2.40	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	3.40		Clay Conte	nt 20 - 35%	ya
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	10.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm (S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.9	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	4.2		TE TOTAL		> 1
Available Plant Nutrient							
Total Nitrogen (S)	%	< 0.01	0.16	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	17	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	240	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	100	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	22.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2			
Phytotoxic Elements (by	y soil pH)			Multipurpose & Specific Purpose Topsoils at pl range			
Zinc ^{MU}	mg/kg	< 3	47	< 6.0 < 200		- 7.0 200	> 7.0 < 300
Copper MU	mg/kg	< 4	15	< 100		135	< 200
Nickel MU	mg/kg	< 3	23	< 60	1000	75	< 110
Visible Contaminants (A	Control of the second s	- 0	23	< 00		/3	< 110
>2mm	%	N/a	3.0			0.5	
Plastics	%	N/a	0.00			0.25	
		+		-		0	
Sharps Additional Analytes	%	N/a	0.0	2	78	U	
Available Sodium (S)	ma/l	< 1	52			r	1
Available Sodium (S)	mg/l	<1	4900				
Available Calcium (S) Electrical Conductivity	mg/l uS/cm	< 5	1501	3300			
Electrical Corludctivity	u3/cm	~ 3	1501	3300			
OVERALL COMPLIANCY				N	N	N	N

OVERALL COMPLIANCY
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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range		
Geosphere Environment	tal Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS17	9,		ž:	ω,	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplie		Ĺ	Depth (m)	0.10	Multip	AC	Low F	Calca
Reporting Date: 10/03/	2020	DETS Sample No	465207			2004-01		
Determinand	Reporting Unit	RL		<u> </u>				
Soil Texture								
Clay Content (S)	%	N/a	42.0		5 -	35	1	
Silt Content (S)	%	N/a	31.0		0 -	65		
Sand Content (S)	%	N/a	27.0		30	- 85		
Textural Class (S)	N/a	N/a	Clay	- 1×				
					Clay Conte	nt 5 - 20%		
l and an Invition	0/	4.0.01	4.10	3 - 20	3 - 30	2 - 20	3 - 20	
Loss on Ignition	%	< 0.01	4.10		Clay Conte	nt 20 - 35%		
				5 - 20	5 - 20 5 - 30 2 - 20 5			
Coarse Fragment Conte	nt							
>2mm ^(S)	%	N/a	0.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	3.9		16.00		> 1	
Available Plant Nutrient	:s							
Total Nitrogen (S)	%	< 0.01	0.17	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable)	mg/l	< 3	17	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable)	mg/l	< 20	150	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/I	< 1	61	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)		< 0.1	22.0	< 20:1	< 20 : 1	< 20:1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2				
Phytotoxic Elements (by	y soil pH)			Multipurpos	se & Specific rar	Purpose To	psoils at pH	
			5	< 6.0	6.0	- 7.0	> 7.0	
Zinc ^{MU}	mg/kg	< 3	51	< 200		200	< 300	
Copper MU	mg/kg	< 4	15	< 100		135	< 200	
Nickel MU	mg/kg	< 3	24	< 60	<	75	< 110	
Visible Contaminants (A								
>2mm	%	N/a	0.0	< 0.5				
Plastics	%	N/a	0.00	< 0.25				
Sharps	%	N/a	0.0	2		0		
Additional Analytes								
Available Sodium (S)	mg/l	< 1	41					
Available Calcium (S)	mg/l	< 1	3400	32,292,47				
Electrical Conductivity	uS/cm	< 5	1448	3300				
				2000	1000	Pa 95282		
OVERALL COMPLIANCY				N	N	N	N	

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BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS18	es es		£	s
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)	0.10	Multi	Ac	Low	Calca
Reporting Date: 10/03/	2020	DETS Sample No	465208				
Determinand	Reporting Unit	RL		1			
Soil Texture							
Clay Content (S)	%	N/a	41.0		5 -	35	1
Silt Content (S)	%	N/a	34.0	0 - 65			
Sand Content (S)	%	N/a	25.0		30	- 85	
Textural Class (S)	N/a	N/a	Clay			e:	
3					Clay Conte	nt 5 - 20%	
l sas an Tanikian	0/	4 0 01	6.20	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	6.20		Clay Conte	nt 20 - 35%	2
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt	•					
>2mm ^(S)	%	N/a	4.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.6	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	1.8	1 -11-	TE 10000		> 1
Available Plant Nutrient							
Total Nitrogen (S)	%	< 0.01	0.16	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	19	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	240	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	100	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	23.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	ž.			
Phytotoxic Elements (by	y soil pH)			Multipurpos	•	Purpose To	psoils at pH
				< 6.0	6.0	- 7.0	> 7.0
Zinc MU	mg/kg	< 3	62	< 200		200	< 300
Copper MU	mg/kg	< 4	14	< 100		135	< 200
Nickel MU	mg/kg	< 3	21	< 60	<	75	< 110
Visible Contaminants (A		- 300					
>2mm	%	N/a	0.0	< 0.5			
Plastics	%	N/a	0.00			0.25	
Sharps	%	N/a	0.0			0	
Additional Analytes		10000					
Available Sodium (S)	mg/l	< 1	37				
Available Calcium (S)	mg/l	<1	5500	2005			
Electrical Conductivity	uS/cm	< 5	1452	3300			
OVERALL COMPLIANCY				N	N	N	N

OVERALL COMPLIANCY
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BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS19	9		£	ω
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	0.10 Walti	Acidic	Low Fertility	Calcareous
Order No: None Supplie	d	Depth (m)	0.10				
Reporting Date: 10/03/	2020	DETS Sample No	465209				
Determinand	Reporting Unit	RL					
Soil Texture			*				
Clay Content (S)	%	N/a	41.0		5 -	35	
Silt Content (S)	%	N/a	34.0	0 - 65			
Sand Content (S)	%	N/a	25.0		30	- 85	
Textural Class (S)	N/a	N/a	Clay	(P			
	8			9	Clay Conte	nt 5 - 20%	
	04	0.04	4.70	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	4.70		Clay Conte	nt 20 - 35%	
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	1.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	1.2		F 1035		> 1
Available Plant Nutrient							
Total Nitrogen (S)	%	< 0.01	0.18	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	19	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/l	< 20	260	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	110	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	20.0	< 20:1	< 20:1	< 20:1	< 20:1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2			
Phytotoxic Elements (by	/ soil pH)			Multipurpos	se & Specific rar	Purpose To	psoils at pH
22				< 6.0	6.0	- 7.0	> 7.0
Zinc MU	mg/kg	< 3	58	< 200		200	< 300
Copper MU	mg/kg	< 4	15	< 100		135	< 200
Nickel MU	mg/kg	< 3	23	< 60	<	75	< 110
Visible Contaminants (A			2007				
>2mm	%	N/a	0.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	2		0	
Additional Analytes							
Available Sodium (S)	mg/l	< 1	42				
Available Calcium (S)	mg/l	< 1	5800	10.292			
Electrical Conductivity	uS/cm	< 5	1466	3300			
OVERALL COMPLIANCY				N	M	N	N
OVERALL COMPLIANCY			or a paint or our analysis of the control of the co	N	N	N	N

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BS3882 Topsoil Suite								
DETS Report No: 20-025	527	Date Sampled	25/02/2020	0	Compliance	with Range		
Geosphere Environment	tal Ltd	Time Sampled	None Supplied					
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS20	9,		ž:	u ₀	
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous	
Order No: None Supplie	d	Depth (m)	0.10	0.10 465210	AC	Low F	Calca	
Reporting Date: 10/03/	2020	DETS Sample No	465210					
Determinand	Reporting Unit	RL						
Soil Texture								
Clay Content (S)	%	N/a	36.0		5 -	35		
Silt Content (S)	%	N/a	41.0		0 -	65		
Sand Content (S)	%	N/a	23.0		30	- 85		
Textural Class (S)	N/a	N/a	Clay					
				Clay Content 5 - 20%				
Lancas Tanihian	0/	4 0 01	6 10	3 - 20	3 - 30	2 - 20	3 - 20	
Loss on Ignition	%	< 0.01	6.10		Clay Conte	nt 20 - 35%		
				5 - 20	5 - 20 5 - 30 2 - 20 5 -			
Coarse Fragment Conte	nt							
>2mm ^(S)	%	N/a	2.0	0 - 30	0 - 30	0 - 30	0 - 30	
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10	
>50mm ^(S)	%	N/a	0.0	0	0	0	0	
pH ^{MU}	pH Units	N/a	7.7	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0	
Carbonate	%	< 0.1	3.7				> 1	
Available Plant Nutrient			2200000000					
Total Nitrogen (S)	%	< 0.01	0.16	≥ 0.15	≥ 0.15		≥ 0.15	
Phosphorus (Extractable)	mg/l	< 3	11	16 - 140	16 - 140	≤ 15	16 - 140	
Potassium (Extractable) (S)	mg/l	< 20	140	121 - 1500	121 - 1500		121 - 1500	
Magnesium (Extractable)	mg/l	< 1	44	51 - 600	51 - 600		51 - 600	
Carbon / Nitrogen Ratio (S)		< 0.1	22.0	< 20:1	< 20:1	< 20:1	< 20:1	
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.				
Phytotoxic Elements (by	y soil pH)			Multipurpos	se & Specific rar	Purpose To	psoils at pH	
				< 6.0	6.0	- 7.0	> 7.0	
Zinc MU	mg/kg	< 3	59	< 200		200	< 300	
Copper MU	mg/kg	< 4	14	< 100		135	< 200	
Nickel MU	mg/kg	< 3	21	< 60	<	75	< 110	
Visible Contaminants (A								
>2mm	%	N/a	0.0	< 0.5				
Plastics	%	N/a	0.00).25		
Sharps	%	N/a	0.0	2		0		
Additional Analytes				-				
Available Sodium (S)	mg/l	< 1	44					
Available Calcium (S)	mg/l	< 1	3100	2202				
Electrical Conductivity	uS/cm	< 5	1478	3300				
OVERALL COMPLIANCY				N	N	N	N	
OVERALL CONFLIANCE			and the second s	IN	IV	IN	IN.	

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DETS Report No: 20-02!	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	tal Ltd	Time Sampled	None Supplied				
Site Reference: Boyton	Place, Haverhill	TP / BH No	TS21	1			
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied 0.10		끍	rtility	Calcareous
Order No: None Supplie	d	Depth (m)			Acidic Low Fertility	ow Fe	
Reporting Date: 10/03/	2020	DETS Sample No	465211			_	
Determinand	Reporting Unit	RL					
Soil Texture				1			ì
Clay Content (S)	%	N/a	29.0	1	5 -	35	
Silt Content (S)	%	N/a	32.0	0 - 65			
Sand Content (S)	%	N/a	39.0		12.0	- 85	
Textural Class (S)	N/a	N/a	Clay Loam	:	11.000	•	
					Clay Conte	nt 5 - 20%	
	-	5572/02/5		3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	3.60			nt 20 - 35%	
				5 - 20	5 - 30	2 - 20	5 - 20
Coarse Fragment Conte	nt						
>2mm ^(S)	%	N/a	8.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm ^(S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	11.8		TE POSS II		> 1
Available Plant Nutrient	ts .						
Total Nitrogen ^(S)	%	< 0.01	0.19	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable)	mg/l	< 3	13	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable)	mg/I	< 20	200	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/I	< 1	87	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	17.0	< 20:1	< 20 : 1	< 20 : 1	< 20 : 1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2.		W	
Phytotoxic Elements (by	y soil pH)			Multipurpos	se & Specific ran		psoils at ph
<u> </u>			- 5	< 6.0	6.0	- 7.0	> 7.0
Zinc MU	mg/kg	< 3	43	< 200	< 2		< 300
Copper MU	mg/kg	< 4	14	< 100	< 1		< 200
Nickel MU	mg/kg	< 3	18	< 60	<	75	< 110
Visible Contaminants (A							
>2mm	%	N/a	2.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	. Ç	()	
Additional Analytes		12/2	40				
Available Sodium (S)	mg/l	< 1	40				
Available Calcium ^(S) Electrical Conductivity	mg/l uS/cm	< 1 < 5	4000	3300	- 8		
	IIS/cm	< 5	1406	3300			

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepencies with current legislation

M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test





BS3882 Topsoil Suite							
DETS Report No: 20-025	527	Date Sampled	25/02/2020		Compliance	with Range	
Geosphere Environment	al Ltd	Time Sampled	None Supplied				
Site Reference: Boyton I	Place, Haverhill	TP / BH No	TS22	es S		£	s
Project / Job Ref: 4712,	GI	Additional Refs	None Supplied	Multipurpose	Acidic	Low Fertility	Calcareous
Order No: None Supplied	đ	Depth (m)	0.10			Low	Calc
Reporting Date: 10/03/	2020	DETS Sample No	465212				
Determinand	Reporting Unit	RL					
Soil Texture							
Clay Content (S)	%	N/a	43.0		5 -	35	
Silt Content (S)	%	N/a	36.0	0 - 65			
Sand Content (S)	%	N/a	21.0	30 - 85			
Textural Class (S)	N/a	N/a	Clay			-	
				3 (3)	Clay Conte	nt 5 - 20%	4
Loss on Tanition	%	< 0.01	4.00	3 - 20	3 - 30	2 - 20	3 - 20
Loss on Ignition	%	< 0.01	4.00		Clay Conte	nt 20 - 35%	
				5 - 20	5 - 30 2 - 20 5 - 3		
Coarse Fragment Conter	nt						
>2mm ^(S)	%	N/a	10.0	0 - 30	0 - 30	0 - 30	0 - 30
>20mm ^(S)	%	N/a	0.0	0 - 10	0 - 10	0 - 10	0 - 10
>50mm (S)	%	N/a	0.0	0	0	0	0
pH ^{MU}	pH Units	N/a	7.8	5.5 - 8.5	3.5 - 5.5	3.5 - 9.0	7.5 - 9.0
Carbonate	%	< 0.1	9.5				> 1
Available Plant Nutrient	S						
Total Nitrogen (S)	%	< 0.01	0.16	≥ 0.15	≥ 0.15		≥ 0.15
Phosphorus (Extractable) (S)	mg/l	< 3	18	16 - 140	16 - 140	≤ 15	16 - 140
Potassium (Extractable) (S)	mg/l	< 20	250	121 - 1500	121 - 1500		121 - 1500
Magnesium (Extractable)	mg/l	< 1	100	51 - 600	51 - 600		51 - 600
Carbon / Nitrogen Ratio (S)	:1	< 0.1	21.0	< 20:1	< 20:1	< 20:1	< 20 : 1
Exchangeable Sodium (S)	%	< 0.1	< 0.1	2			
Phytotoxic Elements (by	soil pH)			Multipurpos		nge	psoils at pH
110			1	< 6.0	6.0	- 7.0	> 7.0
Zinc ^{MU}	mg/kg	< 3	49	< 200		200	< 300
Copper MU	mg/kg	< 4	14	< 100		135	< 200
Nickel MU	mg/kg	< 3	18	< 60	<	75	< 110
Visible Contaminants (A			200000				
>2mm	%	N/a	1.0	< 0.5			
Plastics	%	N/a	0.00	< 0.25			
Sharps	%	N/a	0.0	2		0	
Additional Analytes							
Available Sodium (S)	mg/l	< 1	44				
Available Calcium (S)	mg/l	< 1	4800				
Electrical Conductivity	uS/cm	< 5	1428	3300			
				T. 3250	P - 1200 - 13	F F5.50	9000
OVERALL COMPLIANCY				N	N	N	N

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepencies with current legislation

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U Denotes ISO17025 accredited test

Subcontracted analysis (S)



DETS Ltd Unit 1, Rose Lane Industrial Estate Rose Lane Lenham Heath Maidstone Kent ME17 2JN Tel: 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 20-02527

Geosphere Environmental Ltd

Site Reference: Boyton Place, Haverhill

Project / Job Ref: 4712,GI

Order No: None Supplied

Reporting Date: 10/03/2020

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
465191	TS1	None Supplied	0.10	14.3	Brown loamy clay with vegetation
465192	TS2	None Supplied	0.10	14	Brown loamy clay
465193	TS3	None Supplied	0.10	13.4	Brown loamy clay with stones and vegetation
465194	TS4	None Supplied	0.10	14.6	Brown loamy clay
465195	TS5	None Supplied	0.10	16.5	Brown loamy clay with vegetation
465196	TS6	None Supplied	0.10		Brown loamy clay with vegetation
465197	TS7	None Supplied	0.10	14.9	Brown loamy clay with stones and vegetation
465198	TS8	None Supplied	0.10	17.9	Brown loamy clay with vegetation
465199	TS9	None Supplied	0.10	18.8	Brown loamy clay
465200	TS10	None Supplied	0.10	17	Brown loamy clay with stones
465201	TS11	None Supplied	0.10	14.9	Brown loamy clay with stones and vegetation
465202	TS12	None Supplied	0.10	18.2	Brown loamy clay with stones and vegetation
465203	TS13	None Supplied	0.10	17.4	Brown loamy clay with stones and vegetation
465204	TS14	None Supplied	0.10	19.6	Brown loamy clay with vegetation
465205	TS15	None Supplied	0.10	17.7	Brown loamy clay with vegetation
465206	TS16	None Supplied	0.10	17.7	Brown loamy clay with vegetation
465207	TS17	None Supplied	0.10	19.3	Brown loamy clay
465208	TS18	None Supplied	0.10	21.4	Brown loamy clay with vegetation
465209	TS19	None Supplied	0.10	19.1	Brown loamy clay with vegetation
465210	TS20	None Supplied	0.10	22.5	Brown loamy clay with vegetation
465211	TS21	None Supplied	0.10	18.7	Brown loamy clay with stones
465212	TS22	None Supplied	0.10	17.5	Brown loamy clay with stones and vegetation

Moisture content is part of procedure E003 & is not an accredited test Insufficient Sample ^{I/S} Unsuitable Sample ^{I/S}



DETS Ltd Unit 1, Rose Lane Industrial Estate Rose Lane Lenham Heath Maidstone Kent ME17 2JN Tel: 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 20-02527 Geosphere Environmental Ltd

Site Reference: Boyton Place, Haverhill

Project / Job Ref: 4712,GI
Order No: None Supplied
Reporting Date: 10/03/2020

Soil Soil	On			No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
	AR		Determination of BTEX by headspace GC-MS	E001
Soil	D		Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D		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		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		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		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	CARGOS TO THE SECURITIES OF THE SECURITIES OF	Determination of metals by aqua-regia digestion followed by ICP-OES Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE	E002
Soil	AR AR	Mineral Oil (C10 - C40) Moisture Content	cartridge Moisture content; determined gravimetrically	E004 E003
Soil	D		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		Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D		Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR		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		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		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
	AR		Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried AR As Received

Parameter	Matrix Type	Suite Reference	Uncertainity Measurement	Unit
TOC	Soil	BS EN 12457	7	%
Loss on Ignition	Soil	BS EN 12457	17	%
BTEX	Soil	BS EN 12457	14	%
Sum of PCBs	Soil	BS EN 12457	23	%
Mineral Oil	Soil	BS EN 12457	9	%
Total PAH	Soil	BS EN 12457	20	%
pН	Soil	BS EN 12457	0.23	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18	%
Arsenic	Leachate	BS EN 12457	10	%
Barium	Leachate	BS EN 12457	10	%
Cadmium	Leachate	BS EN 12457	7	%
Chromium	Leachate	BS EN 12457	7	%
Copper	Leachate	BS EN 12457	12	%
Mercury	Leachate	BS EN 12457	12	%
Molybdenum	Leachate	BS EN 12457	9	%
Nickel	Leachate	BS EN 12457	10	%
Lead	Leachate	BS EN 12457	5	%
Antimony	Leachate	BS EN 12457	9	%
Selenium	Leachate	BS EN 12457	10	%
Zinc	Leachate	BS EN 12457	7	%
Chloride	Leachate	BS EN 12457	8	%
Fluoride	Leachate	BS EN 12457	9	%
Sulphate	Leachate	BS EN 12457	9	%
TDS	Leachate	BS EN 12457	12	%
Phenol Index	Leachate	BS EN 12457	14	%
DOC	Leachate	BS EN 12457	10	%
Clay Content	Soil	BS 3882: 2015	15	%
Silt Content	Soil	BS 3882: 2015	14	%
Sand Content	Soil	BS 3882: 2015	13	%
Loss on Ignition	Soil	BS 3882: 2015	17	%
pН	Soil	BS 3882: 2015	0.23	Units
Carbonate	Soil	BS 3882: 2015	16	%
Total Nitrogen	Soil	BS 3882: 2015	12	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24	%
Potassium (Extractable)	Soil	BS 3882: 2015	20	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26	%
Zinc	Soil	BS 3882: 2015	7	%
Copper	Soil	BS 3882: 2015	12	%
Nickel	Soil	BS 3882: 2015	10	%
Available Sodium	Soil	BS 3882: 2015	23	%
Available Calcium	Soil	BS 3882: 2015	23	%
Electrical Conductivity	Soil	BS 3882: 2015	10	%











