Appendices

Details of Observations

Land near Thoroton: Soils and ALC survey – Details of observations at each sampling point

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
1	0-28	SCL	<5	28-35	C(r)	xxx	28-60 60-110	LMS LMS+C bands	xxx xxx	0	II/III	3a	D
2	0-30	SCL	<5	30-50	SCL	xx	50+	stopped on SST		0	II	3b	D
3	0-35	SCL	<5	35-70	C(r)	xxx	70-90 90+	SCL stopped on SST	x	0	III	3a	W/D
4	0-32	MCL	<5	32-45	HCL	xxxx	45-89 89+	C SST	xxx	0	III	3a	W/D
5	0-30	MSL-SCL	<5	30-50	st LMS	xxx	50-100	C	xxxx	0	III	3a	W/D
6	0-30	SCL	<5	30-80	C(r) with sand incl	xxx	80-100+	SCL	xxx	0	III	3a	W/D
7	0-30	SCL	<5	30-60	C	xxx	60-70 70+	st SCL stopped on SST	xxx	0	III	3b	D
8	0-30	HCL/SCL	<5	30-70	st HCL/SCL	xxx	70+	SST		0	III	3a/b	W
9	0-30	HCL	<5	30-50	C	xxx	50-70 70-90 90-110	HCL C SCL	xxx xxx xxx	0	III	3b	W
10	0-34	HCL	3	34-45	HCL	x	45-70 70-100	HCL C(r)	xxx xxx	0	II	3a	W/D
11	0-29	SCL	5-10	29-45	SCL	xx(x)	45-64 64+	C MST	xx(x)	0	II	3a	D
12	0-32	SCL	5-10	32-65	C	xxx	65-85 85-90+	SCL C	xxx xxxx	0	III	3a	W/D
13	0-30	SCL	5	30-42	SCL	xxx	42-78 78-120	C MST	xxxx	1	III	3a	W/D
14	0-35	SCL	<5	35-55	SCL	xxx	55-110 100+	HCL stop on stones	xxx	0	III	3a	W/D
15	0-30	HCL	<5	30-45	HCL	xxx	45-80 80+	(st) SCL stopped on stones	xxx	0	III	3a	W/D
16	0-30	HCL/C	<5	30-80	C	xxxx	80-100	(SCL	xxx	0	III	3b	W
17	0-30	HCL	<5	30-45	HCL	xx	45-70	HCL	xx(x)	0	II	3a	W
18	0-30	HCL	<5	30-55	HCL-SCL	xxx	55-85 85+	C(r) stopped	xxx	0	III	3b	W
19	0-28	HCL	<5	28-70	C(r)	xx	70-100	C+MST	xx	2	III	3b	W
20	0-30	SCL/MSL	5-10	30-52	SCL/MSL	xxx	52-90+	C	xxxx	1	III	3a	D
21	0-35	SCL	5-10	35-42	SCL	xxx	42-90+	C	xxxx	1	III	3a	W/D
22	0-29	SCL/MSL	5	29-55	SCL	xx	55-90+	C(r)	xx	1	II	3a	D
23	0-34	SCL	<5	34-53	SCL	xx	53-90+	C(r)	xx	1	II	3a	D

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
24	0-31	SCL	<5	31-54	SC	xxx	54-83 83+	mstSCL Stopped on stones	xxx	1	III/II	3a	D
25	Drainage ditch												
26	0-30	C	0	30-49	C	xxx	49-90+	HZCL	xxx	0	III	3b	W
27	0-30	C	<5	30-80+	C(gr)	xxxx				0	III	3b	W
28	0-30	HCL	<5	30-70	HCL	x	70-80 80-110+	HCL C(r)	xxx xxx	0	II	3a	W
29	0-34	HCL	<5 <5	34-70	C(r)	xx	70-80+ 80+	mudstone stopped	-	2	III	3b	W
30	0-30	HCL	<5	30-70	C(r)	xx	70-100+	mudstone		1	III	3b	W
31	0-30	SCL/HCL	<5	30-52	C	xxx	52-90+	C(r)	xx	1	III	3a/3b	W
32	0-29	SCL	<5	29-53	SCL	xxx	53-90+	C	xxxx	1	III	3a	W/D
33	0-35	SCL	<5	35-52	mstMSL	xx(x)	52-90+	C	xxxx	1	III/II	3a	D
34	0-33	SCL	<5	33-43	SCL(r)	xx	43-63 63+	SC(r) Stopped on stones	xx	1	II	3a	D
35	0-30	HCL	<5	30-73	C	xxx	73-90+	C(r)	xxx	1	III	3b	W
36	0-34	HCL	<5	34-55	C	xxx	55-90+	mstSCL	xxx	0	III	3b	W
37	0-35	C	0	35-77	SC	xxx	77-110+	LMS	xxx	0	III	3b	W
38	0-28	C	0	28-90+	C	xxx				0	III	3b	W
39	0-30	HCL/C	<5	30-80	HCL/C	xxx	80-110+	C(r)	xxx	1	III	3b	W
40	0-25	HCL	<5	25-60	C(r)	x	60-100+	C+MST	x	2	II/III	3a/3b	W
41	0-30	HCL	<5	30-40	HCL	xx	40-100+	C(r)	xx	0	III	3b	W
42	0-31	HCL	<5	31-68	C(r)	xx	68+	MST	xxx	0	III/II	3b/3a	W
43	0-30	MCL/SCL	<5	30-60	SCL	xx	60-100+	C(r)	xxx	0	II	3a/2	D
44	0-32	SCL	<5	32-67	stMSL	xxx	67-90+	C	xxxx	1	III	3a	W
45	0-33	SCL	<5	33-90+	C(r)	xxx				1	III	3a	W
46	Woodland												
47	0-28	HCL/C	0	28-55	HCL/C	xxx	55-90+	C	xxx	1	III	3b	W
48	0-35	C	0	35-56	C	xxx	56-90+	HZCL	xxx	0	III	3b	W
49	0-30	C	<5	30-45	C(r)	x	45-80 80+	MST stopped		1	III	3b	W
50	0-33	HCL	<5	33-100	C(r)	xxx				1	III	3b	W
51	0-30	HCL	<5	30-52	HCL	xxx	52-120	C(r)	xxx	0	III	3b	W
52	0-30	HCL	<5	30-50	C(r)	xxx	50-60 60-90 90+	HCL C(r) MST	xxx xxx	1	III	3b	W
53	0-30	MCL	<5	30-60	HCL-SCL	xx	60-100+	C(r)	xxx	1	II	2	D
54	0-32	HCL	<5	32-45	C	xxx	45-80+	C(r)	xxx	0	III	3b	W
55	0-25	C	<5	25-70	C(gr)	xxxx	70-100+	C(gr)	xxxx	0	III	3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
56	0-30	C	<5	30-100	C	xxxx				0	III	3b	W
57	0-35	C	0	35-45	C	xxx	45-80 80-100+	ZC C	xxxx xxxx	0	III	3b	W
58	0-30	HCL/.C	0	30-40	C(r)	xx	40-80+	MST		2	II	3a	W/D
59	0-30	HCL/C	<5	30-60	C+mudstone	xx	60+	stopped		2	II	3a	W/D
60	0-30	HCL	<5	30-60	C(r)	xxx	60-90 90+	C+ MST MST	xxx	1	II	3a	W
61	0-35	C	0	35-90	C(gr)	xxxx				0	III	3b	W
62	0-30	HCL	<5	30-100	C(gr)	xxxx				0	III	3b	W
63	0-30	C	<5	30-50	C(gr)	xxx	50-100+	C(r)	xxx	0	III	3b	W
64	0-28	C	<5	28-40	C	xxx	40-60 60-100+	ZC C	xxxx xxx	0	III	3b	W
65	0-30	HCL/C	0	30-50	C	xxx	50-90 90-100+	C(r) MST	xxx	0	III	3b	W
66	0-27	HCL	<5	27-70	C(r)	xxx	70-100+	C+ MST	xxx	0	III	3b	W
67	0-30	C	0	30-100	C+ZC	xxxx				0	III	3b	W
68	0-31	C	<5	31-90	C(gr)	xxxx	90-110+	SCL	xxx	0	III	3b	W
69	0-32	HCL	<5	32-70	C(gr)	xxx	70-100+	st SCL	xxx	0	III	3b	W
70	0-30	C	<5	30-70	C(gr)	xxx	70-100+	C(r)	xxx	0	III	3b	W
71	0-30	HCL	<5	30-80	C(gr)	xxx	80-110+	st C+S	xxx	0	III	3b	W
72	0-36	HCL	0	36-61	HZCL/C(r)	o	61-90+	HZCL(r)	xx	3	III/II	3a	W
73	0-30	HCL	<5	30-48	C(r)	xxx	48-100+	C(r)	xxx	2	III	3b	W
74	0-29	C	<5	29-70+	C	xxx				1	III	3b	W
75	0-32	ZC	<5	32-62	ZC	xxx	62-90+	ZC(r)	xxx	1	III	3b	W
76	0-32	HZCL	0	32-90+	ZC	xxx				0	III	3b	W
77	0-26	ZC	<5	26-90+	C	xxx				1	III	3b	W
78	0-36	HZCL/ZC	<5	36-53	C	xxx	53-90+	SCL/gravel	xx(x)	1	III	3b	W
79	0-30	M/HZCL	<5	32-62	HZCL(r)	o	62-90+	HZCL(r)	xx	2	II	3a/2	W
80	0-28	HCL	<5	28-60	HCL(r)	xx	60-90+	C(r)	xxx	2	II	3a	W
81	0-27	HCL	<5	27-66	C	xxx	66-90+	C(r)	xxx	1	III	3b	W
82	0-32	C/HCL	<5	32-72	C(r)	xx	72-90+	HCL(r)	xxx	0	III	3b	W
83	0-30	HZCL	<5	30-53	C(r)	x	53-90+	MST		1	II/III	3a/3b	W
84	Woodland												
85	0-36	C	<5	36-80+	C	xxx				0	III	3b	W
86	0-30	HCL	<5	30-70	(st) C	xxx	70-100	SCL	xxx	0	III	3b	W
87	0-26	MCL	<5	26-100+	HCL(r)	x					I	2	D
88	0-34	HCL	<5	34-53	C(r)	o	53-100+	MST	-	3	II/III	3a/3b	W
89	0-25	HCL/MCL	<5	25-73	C(r)	xx	73-90+	HCL(r)	xx(x)	2	II/III	3a	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
90	0-31	HCL	<5	31-68	C(r)	xxx	68+	MST		1	III	3b	W
91	0-31	C	<5	31-51	C(r)	xxx	51-90+	MST		0	III	3b	W
92	0-26	HZCL	<5	26-56	C(r)	x	56-90+	MST		1	III	3b	W
93	0-39	C	0	39-50	C	xxx	50-90+	C(r)	xxx	0	III	3b	W
94	0-31	C	0	31-90+	C	xxx				0	III	3b	W
95	0-30	C	<5	30-70	C(gr)	xxx	70-100+	C	xxxx	0	III	3b	W
96	0-29	SCL	<5	29-52	SC	xxx	52-80+	SC(r)	xx	1	III	3a	W/D
97	0-30	HCL	<5	30-51	HCL(dist)	xxx	51-80+	C(r)	xx	2	III	3b	W
98	0-35	MCL	<5	35-50	MCL(r)	o	50-68 68+	MCL/MST MST(hard)	o	2	I/II	3a	D
99	0-26	C	<5	26-57	C(r)	xx	57-90+	HCL	o	1	III/II	3b/3a	W
100	0-35	HCL	<5	35-53	C	xxx	53-90+	HCL/C(r)	xxx	0	III	3b	W
101	0-31	C	0	31-57	C	xxx	57-90+	HZCL(r)	xxx	1	III	3b	W
102	0-25	HZCL	0	25-72	C	xxx	72-90+	HZCL(r)	xxx	1	III	3b	W
103	0-45	C	<5	45-60+	C(dist)	xxx				0	-	-	-
104	0-34	C	0	34-64	C	xxx				0	III	3b	W
105	0-30	HCL	<5	30-55	C(dist)		55-100+	st SCL	xxx	0	II	3a	dist
106	Not recorded												
107	0-27	HCL	<5	27-50	HCL(r)	xxx	50-90+	C(r)	xxx	3	III	3b	W
108	0-30	HCL	<5	30-51	HCL(r)	xx(x)	51-90+	MST		1	II/III	3a/3b	W
109	0-30	HCL	<5	30-50	HCL	xx	50-70 70-100+	C(r) MST	xxx	1	II	3a	W
110	0-30	HCL	<5	30-70	C(r)	XXX	70-80+ 80+	MST stopped		2	III	3b	W
111	0-30	HCL	<5	30-45	HCL	xxx	45-70 70+	C(r) mudstone	xxx	1	III	3b	W
112	Woodland												
113	0-28	HZCL	0	28-65	C(r)	x	65-90+	C(r)	xxx	2	III/II	3b/3a	W
114	0-27	HZCL	0	27-37	C(r)	xx(x)	37-90+	C(r)	xxx	1	III	3b	W
115	0-30	HCL	<5	32-51	HCL(r)	xx(x)	51-90+	MST/HCL(r)	xx	1	I/II	2/3a	W
116	0-28	HCL	<5	28-35	HCL	xxx	35-70 70+	C stopped on gravel	xxx	0	III	3b	W
117	0-32	HZCL	0	32-55	HZCL	xxx	55-80+	ZC	xxx	1	III	3b	W
118	0-28	HCL	<5	28-50	HCL(r)	xxx	50-100+	mudstone		0	II/III	3a/3b	W
119	0-28	MCL	<5	28-55	MCL	xx(x)	55-100+	C(r)	xxxx	2	II/III	3a	W
120	0-31	MCL/HCL	<5	31-50	HCL	xx(x)	50-90 90-110+	C(r) mudstone	xxx	1	III	3a/3b	W
121	0-30	M-HCL	<5	30-40	HCL	xx	40-60 60-100+	HCL C(r)	xxx xxx	0	II/III	3a/3b	W

Obs	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
No	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
122	0-28	HCL	<5	28-90	C(r)	xxx	90-100	mudstone		1	III	3b	W
123	0-28	MCL/HCL	<5	28-40	HCL	xx	40-65 65-90+	C(r) mudstone	xxx	0	II/III	3a/3b	W
124	0-32	MCL	<5	32-54	MCL(r)	o	54-65 65+	MST MST(hard)	-	1	I	2	D
125	0-25	HCL	<5	25-45	HCL	xxx xx	45-55 55-100+	st C C(r)	xx	0	III	3b	W
126	0-25	MCL	<5	25-70	C(r)	xxx	70-100+	mudstone		2	III	3a	W
127	0-30	MCL	<5	30-50	MCL	xx	50-100+	st C	xxx	1	II	2	W/D
128	0-30	HCL	<5	30-52	HCL	xx(x)	52-90 90+	C(r) mudstone	xxx	0	III	3b	W
129	0-30	HCL	<5	30-55	C(r)	xx	55-70 75+	mudstone stopped		0	III	3b	W
130	0-35	MCL	<5	35-45	HCL	xx	45-100+	C(r)	xxx	0	III	3a	W
131	0-32	HCL	<5	32-100	C(r)	xxx				1	III	3a	W
132	0-30	MCL-SCL	<5	30-60	MCL-SCL	x	60-110+	MSL	xx	2	II	2	W
133	0-30	MCL	<5	30-50	HCL	xx(x)	50-100+	C(r)	xx	0	III	3a	W
134	0-26	HCL	<5	26-70	C(r)	xxx	70-100+	mudstone		0	III	3b	W
135	0-30	MCL	<5	30-70	C(r)	xx	70-100+	C+mudstone	xx	0	III	3a	W
136	0-30	SCL	<5	30-90	SCL	x	90-110+	LMS	xxx	2	I/II	2	D
137	0-27	MCL-SCL	<5	27-60	HCL	xx(x)	60-100+	C(r)	xx	0	II	2	W/D
138	0-30	HCL	<5	30-60	HCL	xx	60-110+	C(r)	xx	0	II	3a	W

Survey log key

Gley indicators[1]

o	unmottled
x	1-2% ochreous mottles and brownish matrix (or a few to common root mottles (topsoils))[3]
xx	>2% ochreous mottles and brownish matrix and/or dull structure faces (slightly gleyed horizon)
xxx	>2% ochreous mottles and greyish or pale matrix (gleyed horizon) or reddish matrix and >2% greyish, brownish or ochreous mottles and pale ped faces mottles or f-m concentrations (gleyed horizon)
xxxx	dominantly blueish matrix often with some ochreous mottles (gleyed horizon)

Slowly permeable layers[4]

a depth underlined (e.g. 50) indicates
the top of a slowly permeable layer
A wavy underline (e.g. 50 indicates
the top of a layer borderline to slowly permeable

Texture[2]

C - clay
ZC - silty clay
SC - sandy clay
CL - clay loam (H-heavy, M-medium)
ZCL - silty clay loam (H-heavy, M-medium)
SZL - sandy silt loam (F-fine, M-medium,C-coarse)
LS - loamy sand (F-fine, M-medium, C-coarse)
SL - sandy loam (F-fine, M-medium, C-coarse)
S - sand (F-fine, M-medium, C-coarse)
SCL - sandy clay loam
P - peat (H-humified, SF-semi-fibrous, F-fibrous)
LP - loamy peat; PL - peaty loam

Wetness Class[5]

I (freely drained) to VI (very poorly drained)

Limitations:

W - wetness/workability
D - droughtiness
De - depth
F - flooding
St – stoniness
Sl – slope
T – topography/microrelief

Suffixes & prefixes:

r-reddish, gn – greenish
o - organic
(m, v, x)st – (moderately, very, extremely)

(vsl, sl, m, v, x)(very slightly, slightly, moderately very, extremely) calcareous

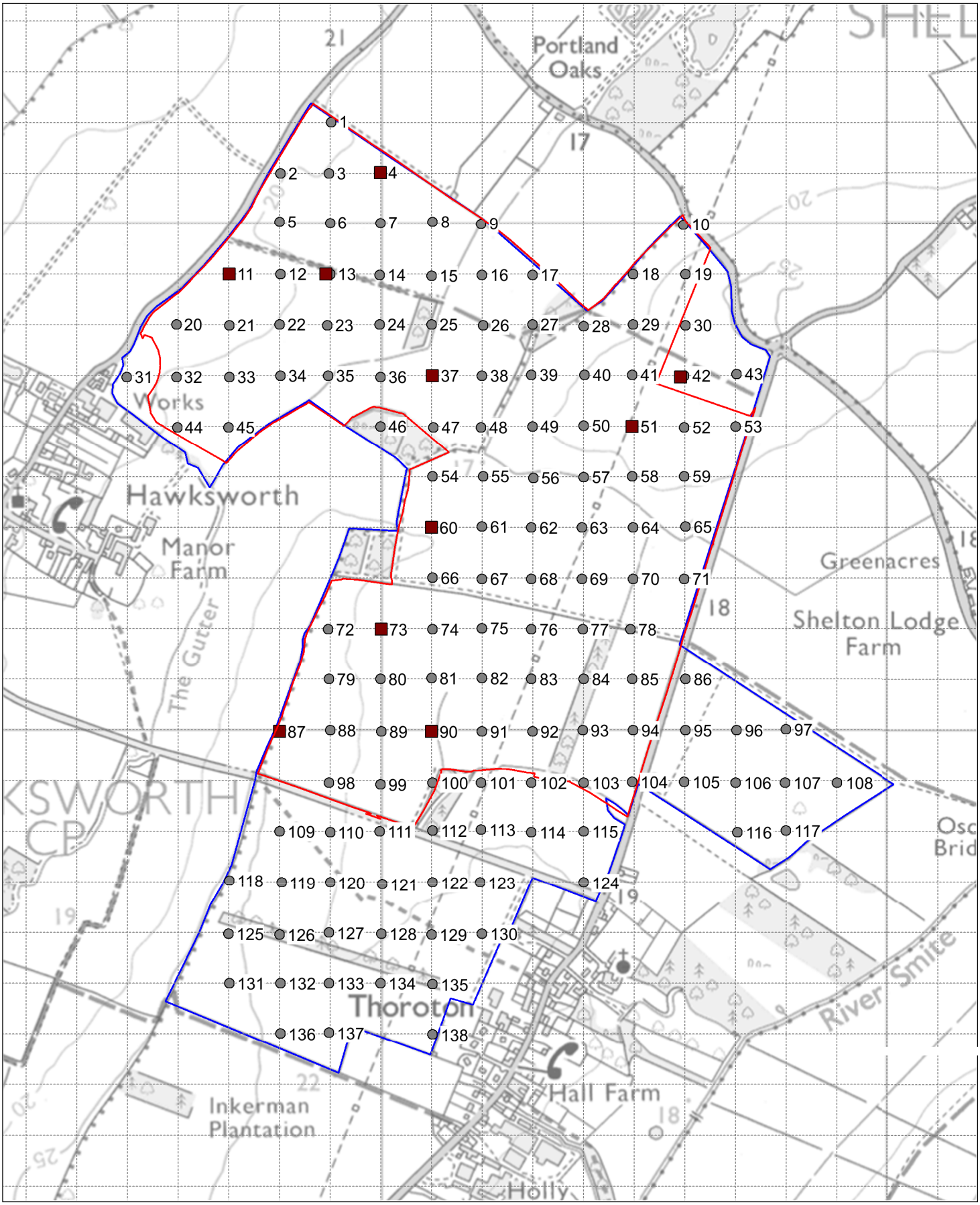
Other abbreviations

fmn - ferri-manganiferous concentrations
dist - disturbed soil layer;
R – bedrock (CH – chalk, SST – sandstone
LST – limestone, MST – Mudstone)

[1]Gley indicators in accordance with Hodgson, J.M., 1997. Soil Survey Field Handbook (third edition). Soil survey technical monograph No. 5

[2]Texture in accordance with particle size classes in Hodgson (1997)
[3] Occasionally recorded in the texture box
[4]Permeability is estimated for auger borings and must be confirmed by full pit observations in accordance with the definitions in: Revised Guidelines for grading the quality of Agricultural Land (Maff 1988)
[5]Soil Wetness Classes are defined in Hodgson (1997)
[6]stoniness classes as defined in Hodgson (1997)
[7]calcareous classes as defined in Hodgson (1997)

Maps



Job ref: **Longhedge**

Map title: **Map 1 Observations**

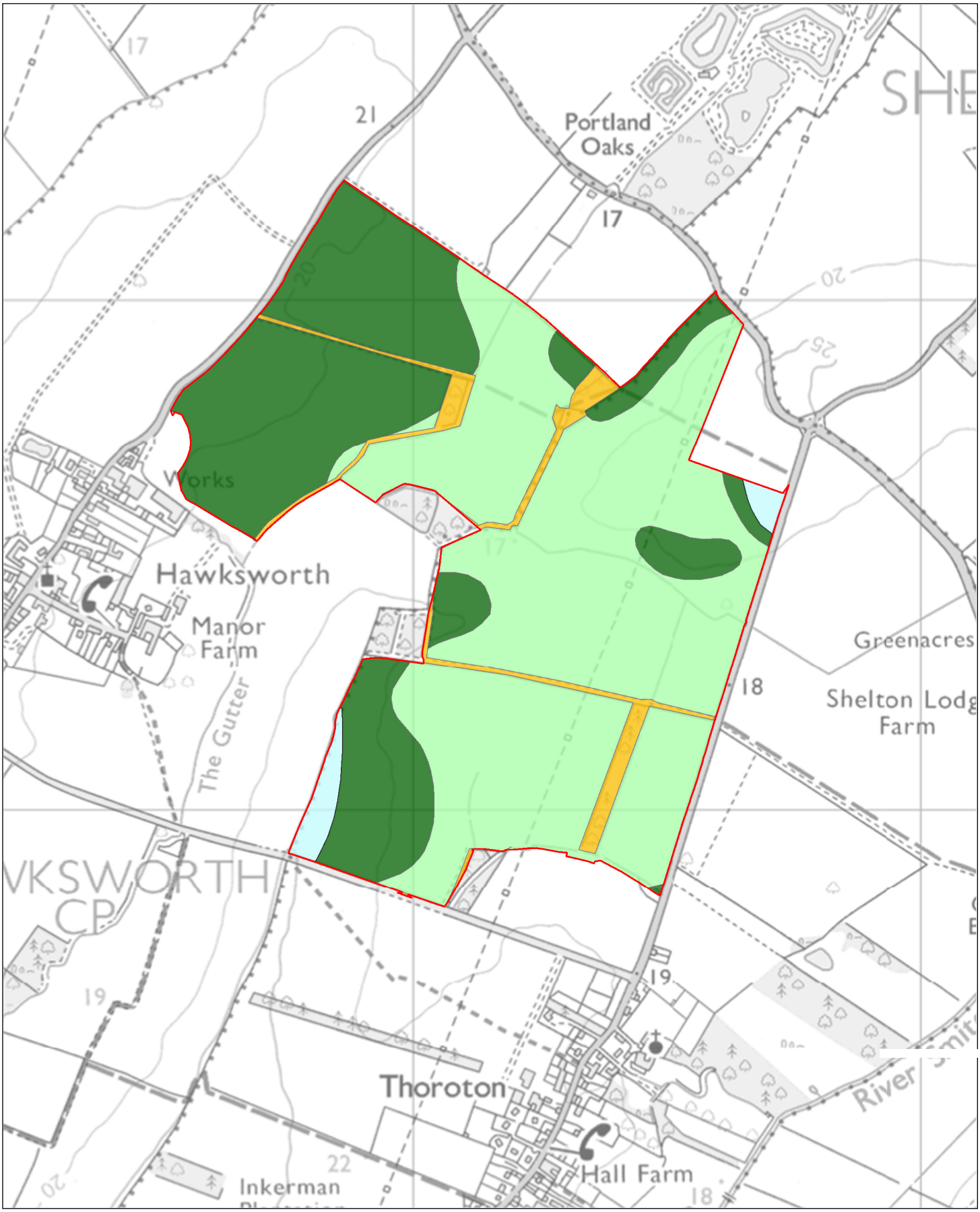
Key

- Auger observation point:
- Soil pit
- Application area
- Survey area

Land Research Associates
Lockington Hall
Lockington
DE74 2RH
www.lra.co.uk

Date: 12/09/22

Scale 1:10,000:



Job ref: **Longhedge**

Map title: **Map 2 Agricultural Land Classification**

Key

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Other land
- Application area

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Date: 12/09/22

Scale 1:10,000:

Selected droughtiness calculations

SITE:	Thoroton
Location:	4

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	32	mcl	m	3	1
Subsoil 1	45	hcl	m	3	1
Subsoil 2	89	c	p	0	1
Subsoil 3	120	stop	p	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	18	1
Subsoil 1 TAv	16	1
Subsoil 1 EAv	10	0.5
Subsoil 2 TAv	13	1
Subsoil 2 EAv	7	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	559.7	559.7
Subsoil 1	0.0	202.2
Subsoil 1	202.2	0.0
Subsoil 2	325.0	0.0
Subsoil 2	0.0	308.0
Subsoil 3	0.0	3.1
TOTAL AP (mm)	109	107
MD (mm)	116	121
AP-MD (mm)	-7	-14

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2	*	
3a		*
3b		
4		

SITE:	Thoroton
Location:	11

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	29	scl	m	7	1
Subsoil 1	45	scl	m	10	1
Subsoil 2	64	c	p	0	1
Subsoil 3	120	c	p	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	17	1
Subsoil 1 TAv	15	1
Subsoil 1 EAv	10	0.5
Subsoil 2 TAv	13	1
Subsoil 2 EAv	7	0.5
Subsoil 3 TAv	13	1
Subsoil 3 EAv	7	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	460.5	460.5
Subsoil 1	0.0	217.6
Subsoil 1	217.6	0.0
Subsoil 2	0.0	0.0
Subsoil 2	247.0	133.0
Subsoil 3	78.0	392.0
TOTAL AP (mm)	100	120
MD (mm)	116	121
AP-MD (mm)	-16	-1

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2		
3a	*	*
3b		
4		

SITE: Thoroton
Location: 13

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	30	scl	m	10	1
Subsoil 1	42	scl	m	25	1
Subsoil 2	78	c	p	0	1
Subsoil 3	120	c	p	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	17	1
Subsoil 1 TAv	15	1
Subsoil 1 EAv	10	0.5
Subsoil 2 TAv	13	1
Subsoil 2 EAv	7	0.5
Subsoil 3 TAv	13	1
Subsoil 3 EAv	7	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	462.0	462.0
Subsoil 1	0.0	138.0
Subsoil 1	138.0	0.0
Subsoil 2	364.0	0.0
Subsoil 2	0.0	252.0
Subsoil 3	0.0	294.0
TOTAL AP (mm)	96	115
MD (mm)	116	121
AP-MD (mm)	-20	-6

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2		
3a	*	*
3b		
4		

SITE:	Thoroton
Location:	60

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	30	hcl		3	1
Subsoil 1	40	c	m	3	1
Subsoil 2	120	c	m	3	1
Subsoil 3	stop	c	p	0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	18	1
Subsoil 1 TAv	16	1
Subsoil 1 EAv	8	0.5
Subsoil 2 TAv	16	1
Subsoil 2 EAv	8	0.5
Subsoil 3 TAv	13	1
Subsoil 3 EAv	7	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	524.7	524.7
Subsoil 1	0.0	155.5
Subsoil 1	155.5	0.0
Subsoil 2	466.5	0.0
Subsoil 2	0.0	622.0
Subsoil 3	0.0	0.0
TOTAL AP (mm)	115	130
MD (mm)	116	121
AP-MD (mm)	-1	9

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2	*	*
3a		
3b		
4		

SITE:	Thoroton
Location:	87

Layer	*Lower depth* (cm)	*Texture symbol* (or stop)	*Structure* (Good, Moderate or Poor)	*% stones*	*Stone type* (see table)
Topsoil	29	mcl	m	3	1
Subsoil 1	45	hcl	m	3	1
Subsoil 2	120	hcl	p	3	1
Subsoil 3	120	stop		0	1

(Lowest horizon depth must be 120 and topsoil cannot be greater than 70 cm (potatoes) or 50 cm (wheat))

DATA USED FROM MASTER TABLE

	Fine earth	*Stones*
Topsoil Av	18	1
Subsoil 1 TAv	16	1
Subsoil 1 EAv	10	0.5
Subsoil 2 TAv	16	1
Subsoil 2 EAv	10	0.5
Subsoil 3 TAv	0.1	1
Subsoil 3 EAv	0.1	0.5
	(ERR = no data)	

Stone codes	
0	No stones
1	Hard rocks or stones
2	Soft, medium or coarse grained sdst
3	Soft weathered ign or metamorph
4	Soft oolitic or dolomitic limestones
5	Soft fine-grained sandstone
6	Soft argillaceous or silty
7	Chalk
8	Gravel with non-porous stones
9	Gravel with porous stones

PROFILE CALCULATIONS

	Ap potatoes	*Ap wheat*
Topsoil	507.2	507.2
Subsoil 1	0.0	248.8
Subsoil 1	248.8	0.0
Subsoil 2	388.8	0.0
Subsoil 2	0.0	728.6
Subsoil 3	0.0	0.0
TOTAL AP (mm)	114	148
MD (mm)	116	121
AP-MD (mm)	-2	27

AGRICULTURAL LAND GRADE

Class	*Potatoes*	*Wheat*
1		
2	*	*
3a		
3b		
4		

Laboratory analysis

ANALYTICAL REPORT

Report Number	**87968-22**	**H579**	**MR MIKE PALMER**	**Client**	**THOROTON**
Date Received	**07-FEB-2022**		**LAND RESEARCH ASSOCIATES**		
Date Reported	**16-FEB-2022**		**LOCKINGTON HALL**		
Project	**SOIL**		**LOCKINGTON**		
Reference	**THOROTON**		**DERBY**		
Order Number			**DE74 2RH**		

Laboratory Reference		**SOIL545282**	**SOIL545283**	**SOIL545284**	**SOIL545285**						
Sample Reference		**TS120**	**TS123**	**TS88**	**TS87**						
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**						
Sand 2.00-0.063mm	% w/w	39	31	27	35						
Silt 0.063-0.002mm	% w/w	37	38	37	41						
Clay <0.002mm	% w/w	24	31	36	24						
Textural Class **		MCL	HCL	C	MCL						

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

** Please see the attached document for the definition of textural classes.

Reported by

Myles Nicholson

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ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

- vf Very Fine (more than 2/3's of sand less than 0.106 mm)
- f Fine (more than 2/3's of sand less than 0.212 mm)
- c Coarse (more than 1/3 of sand greater than 0.6 mm)
- m Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

- M medium (less than 27% clay)
- H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

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