

Land at Glebe Farm: Soils and ALC survey – Details of observations at each sampling point

Obs No	Topsoil				Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
	Depth (cm)	Texture	Stones >20 mm (%)	Stones >60 mm (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
1	0-32	Cslca	<5	<5	<u>32</u> -90+	C	xxx				0	IV	3b	W
2	0-32	Cslca	<5	<5	<u>32</u> -52	C	xxx				0	IV	3b	W
3	0-30	Cca	<5	<5	<u>30</u> -42	C	xxx				1	IV	3b	W
4	0-27	C	<5	<5	<u>27</u> -90+	C	xxx				1	IV	3b	W
5	0-30	Cslca	<5	<5	30-37	C	xxx	<u>37</u> -90+	C	xxx	2	III	(3a)	W
6	0-28	Cca	<5	<5	28-36	C	xxx	<u>36</u> -90+	C	xxx	2	III/IV	(3a)/3b	W
7	0-28	C	<5	<5	<u>28</u> -70	C	xxx	70+	Stopped on stones		1	IV	3b	W
8	0-25	C	<5	<5	<u>25</u> -90+	C	xxx				1	IV	3b	W
9	0-31	C	<5	<5	<u>31</u> -60+	C	xxx				0	IV	3b	W
10	0-28	Cca	<5	<5	<u>28</u> -90+	Cca	xxx				1	IV/III	(3a)/3b	W
11	0-22	HCLca	5	<5	22-28	HCL(brashy)	o	28+	Stopped on stones		2	I	3b	De/D
12	0-22	HCLca	5-10	<5	22-34	SCL	xxx	34+	Stopped on stones		1	-	3b	D
13	0-28	Cslca	<5	<5	<u>28</u> -63	C	xxx	63+	Stopped on stones		1	IV	3b	W
14	0-35	C	<5	<5	<u>35</u> -73	C	xxx	73+	Stopped on stones		1	III/IV	3b	W
15	0-30	C	<5	<5	<u>30</u> -90+	C	xxx				1	IV	3b	W
16	0-26	Cslca	<5	<5	<u>26</u> -70+	C	xxx				1	IV	3b	W
17	0-31	HCLca	<5	<5	31-44	HCL	o	44-69 <u>69</u> -90+	mstMCL C	xxx xxx	1	II	(2)	W
18	0-18	HCLca	<5	<5	30-44	C	xxx	<u>44</u> -70 70+	mstC Stopped on stones	xxx	1	III	(3a)	W
19	0-30	mstHCLca	5-10	<5	30+	Stopped on stones Waterlogged					2	-	3b	D
20	0-33	C	<5	<5	<u>33</u> -68	C	xxx	68+	Stopped on stones		2	IV	3b	W
21	0-32	Cslca	<5	<5	<u>32</u> -90+	C	xxx				0	IV	3b	W
22	0-33	Cslca	<5	<5	<u>33</u> -90+	C	xxx				0	IV	3b	W
23	0-40	Cvslca	<5	<5	<u>40</u> -90+	C	xxx				0	IV	3b	W
24	0-30	C	<5	<5	<u>30</u> -40	C	xxx	<u>40</u> -90+	C	xxx	0	III/IV	3b	W
25	0-24	vstHCL	20	5	24+	Stopped on stones					1	I	3b	De/D
26	0-27	C	<5	<5	<u>27</u> -57	C	xxx	57+	Stopped on stones		3	IV	3b	W
27	0-28	C	<5	<5	<u>28</u> -90+	C	xxx				1	IV	3b	W
28	0-35	C	<5	<5	<u>35</u> -90+	C	xxx				1	III/IV	3b	W
29	0-31	C	0	<5	<u>31</u> -90+	C	xxx				1	IV/III	3b	W
30	0-46	Cca(dist)	<5	<5	<u>46</u> -90+	C	xxx				0	III	(3a)	W
31	0-29	SCL	<5	<5	<u>29</u> -50+	C	xxx				2	IV	3b	W
32	0-28	HCL/SC	<5	<5	<u>28</u> -64	SC	xxx	64+	Stopped on stones		3	IV	3b	W
33	0-28	C	<5	<5	<u>28</u> -90+	C	xxx				0	IV	3b	W

Obs	Topsoil				Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	No	Depth (cm)	Texture	Stones >20 mm (%)	Stones >60 mm (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture			Mottling	Grade
34	0-32	SCL	<5	<5	32-72	SCL	xxx	72+	Stopped on stones		0	III/IV	3a/3b	W
35	0-33	C	<5	<5	33-90+	C	xxx				3	IV	3b	W
36	0-28	C	<5	<5	28-90+	C	xxx				2	IV	3b	W
37	0-28	mstSCL	15-20	<5	28-38	vstSCL	o	38+	Stopped on stones		2	I	3b	D
38	0-29	Cvslca	<5	<5	29-60	C	xxx	60+	Waterlogged		2	IV	3b	W
39	0-36	slstSC	<5	<5	36-70+	C	xxx				4	III/IV	3b	W
40	0-26	SC	<5	<5	26-55	C	xxx	55-63 63-90+	SCL(r) C	o xxx	4	IV	3b	W
41	0-25	C	<5	<5	25-90+	C	xxx				3	IV	3b	W
42	0-24	C	<5	<5	24-90+	C	xxx				3	IV	3b	W
43	0-26	vslstSCL	<5	<5	26-51	SCL/MCL(brashy)	o	51+	Stopped on stones		1	I	3a	D
44	0-22	slstSCL	5-10	<5	22-27	mstSCL	o	27+	Stopped on stones		1	I	3b	De/D
45	0-23	slstSCL	10	<5	23-35	mstSCL	o	35+	Stopped on stones		1	I	3b	D
46	0-30	slstSCL	5-10	<5	30+	Stopped on stones					1	I	3b	D
47	0-26	vstSCL	20	10-15	26+	Stopped on stones					1	I	3b	De/D/St
48	0-50+	mstSCca (dist)	5-10								1	-	-	-
49	0-18	mstSCL	10-15	5-10	18+	Stopped on stones					1	I	4/3b	De/D
50	0-25	mstSCL	15-20	15	25-40+	xstSCL					0	I	3b	De/D
51	0-17	mstSCL	10-15	5-10	17-32	mstSCL	o	32+	Stopped on stones		1	I	3b	D
52	0-32	HCL	<5	<5	32-53	SCL	o	53+	Stopped on stones		1	I	3a	D
53	0-27	SCL	5-10	<5	27-50	SCL	o	50+	Stopped on stones		2	I	3a	D
54	0-28	mstSCL	20	10-15	28+	Stopped on stones					2	I	3b	De/D
55	0-24	mstSCL	5-10	<5	24+	Stopped on stones					2	I	3b	De/D
56	0-22	SCL	<5	<5	22-76	MSL	o	76+	Stopped on stones		1	I	2	D
57	0-29	SCL	10	5	29+	Stopped on stones					1	I	3b	De/D
58	0-27	vslstSCL	10-15	5-10	27-42	mstSCL	o	42+	Stopped on stones		1	I	3b	D
59	0-26	slstSCL	5	<5	26-31	vstSCL	o	31+	Stopped on stones		4	I	3b	D
60	0-32	slstSCL	<5	<5	32-50	mstSCL	o	50-100+	vslstSCL	o	3	I	1/2	D
61	0-28	vslstSCL	<5	<5	28-120	vslstSCL	o				0	I	1	-
62	0-34	vslstSCL	<5	<5	34-100+	vslstSCL	o				5	I	1	-
63	0-22	slstSCL	10	<5	22-32	slstSCL	o	32+	Stopped on stones		2	I	3b	D
64	0-30	slstSCL	5-10	<5	30-36	mstSCL	o	36+	Stopped on stones		3	I	3b	D
65	0-42	slstSCL	<5	<5	42-100+	vslstSCLvslca	o				2	I	1	-
66	0-22	mstSCL	10-15	5-10	22+	Stopped on stones					4	I	3b/4	D
67	0-30	mstSCL	10-15	5-10	30+	Stopped on stones					1	I	3b	D
68	0-31	mstSCL	10-15	5-10	31+	Stopped on stones					1	I	3b	D
69	0-35	SCL	<5	<5	35-85	SCL	o	85+	Stopped on stones		1	I	2	D
70	0-32	SCL	<5	<5	32-50	SCL	o	50+	Stopped on stones		3	I	3a	D

Obs	Topsoil				Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	No	Depth (cm)	Texture	Stones >20 mm (%)	Stones >60 mm (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture			Mottling	Grade
71	0-23	slstSCL	5-10	5-10	23-55+	xstSCL(brashy)	o				3	I	3a	D
72	0-31	slstSCL	<5	<5	31-42	SCL	o	42+	Stopped on stones		2	I	3a	D
73	0-28	mstSCL	10-15	5-10	28+	Stopped on stones					1	I	3b	D/De
74	0-25	mstSCL	10-15	10	25+	LST					1	I	3b	D
75	0-25	slstSCL	10	<5	25-45+	xstSCL	o				1	I	3b	D
76	0-18	slstSCL	10	5-10	18-60	SCL	o	60+	Stopped on stones		2	I	3a/2	D
77	0-24	mstSCL	5-10	<5	24+	Stopped on stones					2	I	3b	D/De
78	0-18	slstSCL	5-10	<5	18-29	vstSCL(brashy)		29+	Stopped on stones		1	I	3b	D/De
79	non-agricultural - track													
80	0-25	vslstSCL	<5	<5	25-45	slstSCL	o	45-65 65+	vstSCL LST	o	1	I	3a	D-
81	0-30	SCL	<5	<5	30+	Stopped on stones					1	I	3b	D
82	0-27	SCL	<5	<5	27+	Stopped on stones					1	I	3b	D/De
83	0-25	mstSCL	10	5-10	25+	Stopped on stones					2	I	3b	D/De
84	0-26	slstSCL	5-10	<5	26+	Stopped on stones					1	I	3b	D/De
85	0-23	slstSCL	5-10	<5	23+	Stopped on stones					1	I	3b	D/De
86	Outside boundary													
87	0-26	SCL	<5	<5	26-48	SCL	o	48+	Stopped on stones		1	I	3a	D
88	0-30	SCL	<5	<5	30+	Stopped on stones					1	I	3b	D
89	0-27	SCL	<5	<5	27+	Stopped on stones					1	I	3b	D/De

Soil log key

Gley indicators¹

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
xxxx	mottles or f-m concentrations (gleyed horizon) dominantly blueish matrix, often with some reddish mottles (gleyed horizon)

Slowly permeable layers⁴

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

Texture²

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 Class⁵

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

Limitations:

W	wetness/workability
D	droughtiness
De	depth
F	flooding
St	stoniness
G	gradient
T	topography/microrelief
C	Climate

Suffixes & prefixes:

o - organic

(vsl, sl, m, v, x)**st** – (very slightly, slightly, moderately, very, extremely) **stony**⁶

(vsl, sl, m, v, x)**ca** (very slightly, slightly, moderately, very, extremely) **calcareous**⁷

Other abbreviations

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

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

²Texture in accordance with particle size classes in Hodgson (1997)

³ Occasionally recorded in the texture box

⁴Permeability 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)

⁵Soil Wetness Classes are defined in Hodgson (1997)

⁶stoniness classes as defined in Hodgson (1997)

⁷calcareous classes as defined in Hodgson (1997)

Grades shown as intergrade e.g. **3a/3b** are close to the grade boundary. The estimate of which side of the boundary the grading falls is the shown first (in bold here) grades in brackets eg. (3a) raised by one grade due to calcareous topsoil

SITE: Ropsley
Location: 61

Layer	Lower depth (cm)	Texture symbol (or stop)	Structure (Good, Moderate or Poor)	% stones	Stone type (see table)
Topsoil	28	SCL		3	1
Subsoil 1	63	SCL	g	3	1
Subsoil 2	120	SCL	m	3	1
Subsoil 3	120	stop	m	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

	<i>Fine earth</i>	<i>Stones</i>
Topsoil Av	17	1
Subsoil 1 TAv	19	1
Subsoil 1 EAv	14	0.5
Subsoil 2 TAv	15	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

	<i>Ap potatoes</i>	<i>Ap wheat</i>
Topsoil	462.6	462.6
Subsoil 1	0.0	0.0
Subsoil 1	646.1	582.9
Subsoil 2	102.1	0.0
Subsoil 2	0.0	553.8
Subsoil 3	0.0	0.0

TOTAL AP (mm)	121	160
MD (mm)	95	105
AP-MD (mm)	26	55

AGRICULTURAL LAND GRADE

<i>Class</i>	<i>Potatoes</i>	<i>Wheat</i>
1	*	*
2		
3a		
3b		
4		

SITE: Ropsley
Location: 74

Layer	Lower depth (cm)	Texture symbol (or stop)	Structure (Good, Moderate or Poor)	% stones	Stone type (see table)
Topsoil	25	SCL		15	1
Subsoil 1	120	SCL	m	80	1
Subsoil 2	120	stop	m	0	1
Subsoil 3	120	stop	m	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	0.1	1
Subsoil 2 EAv	0.1	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	365.0	365.0
Subsoil 1	171.0	263.0
Subsoil 1	0.0	0.0
Subsoil 2	0.0	0.0
Subsoil 2	0.0	0.0
Subsoil 3	0.0	0.0

TOTAL AP (mm)	54	63
MD (mm)	95	105
AP-MD (mm)	-41	-42

AGRICULTURAL LAND GRADE

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

SITE: Ropsley
Location: 80

Layer	Lower depth (cm)	Texture symbol (or stop)	Structure (Good, Moderate or Poor)	% stones	Stone type (see table)
Topsoil	25	SCL		4	1
Subsoil 1	45	SCL	g	7.5	1
Subsoil 2	65	SCL	m	50	1
Subsoil 3	120	SCL	m	80	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

	<i>Fine earth</i>	<i>Stones</i>
Topsoil Av	17	1
Subsoil 1 TAv	19	1
Subsoil 1 EAv	14	0.5
Subsoil 2 TAv	15	1
Subsoil 2 EAv	10	0.5
Subsoil 3 TAv	15	1
Subsoil 3 EAv	10	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

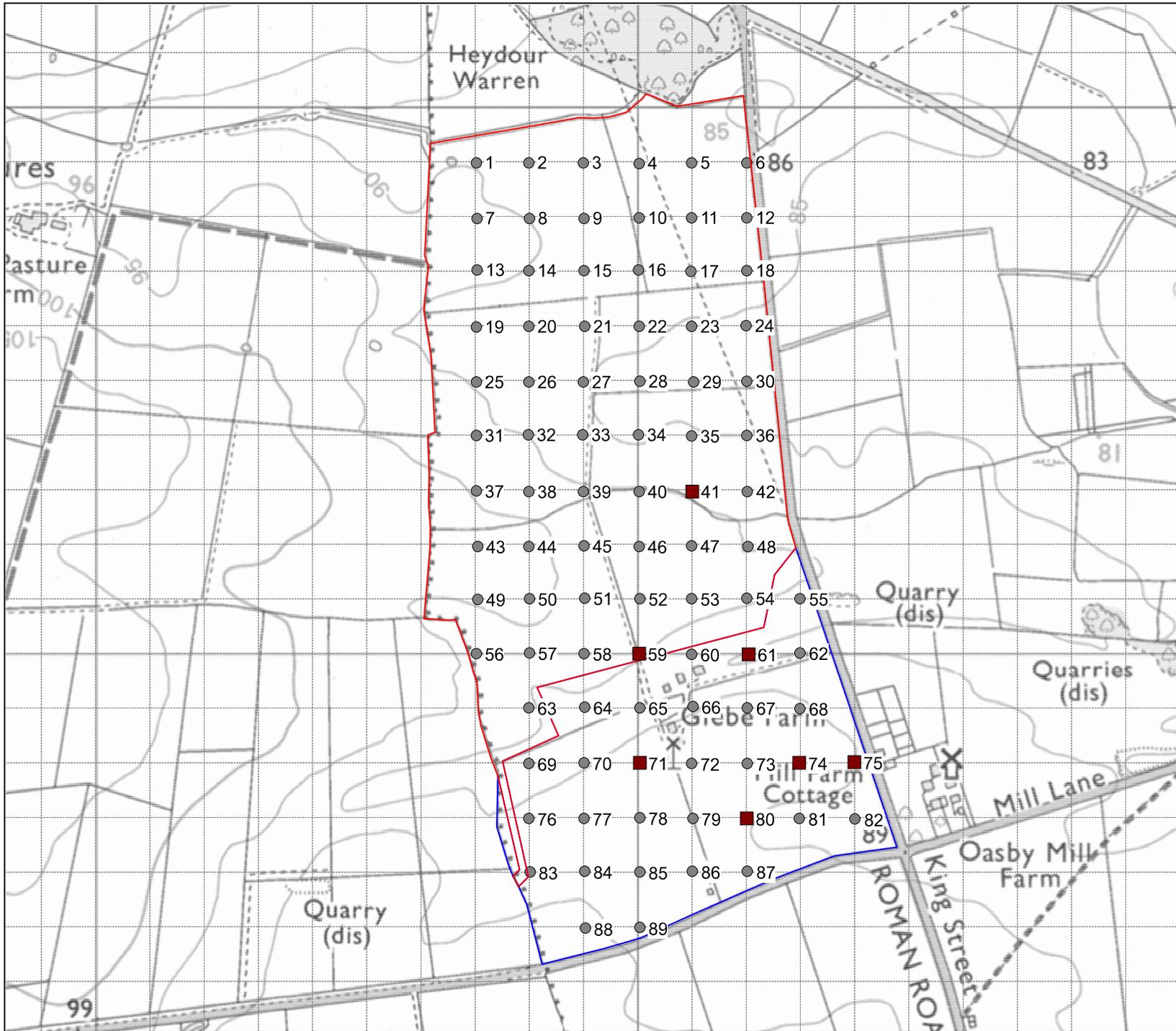
PROFILE CALCULATIONS

	<i>Ap potatoes</i>	<i>Ap wheat</i>
Topsoil	409.0	409.0
Subsoil 1	0.0	353.0
Subsoil 1	353.0	0.0
Subsoil 2	0.0	0.0
Subsoil 2	160.0	105.0
Subsoil 3	19.0	132.0

TOTAL AP (mm)	94	100
MD (mm)	95	105
AP-MD (mm)	-1	-5

AGRICULTURAL LAND GRADE

<i>Class</i>	<i>Potatoes</i>	<i>Wheat</i>
1		
2	*	
3a		*
3b		
4		



KEY

- Auger observations
- Pits
- Site boundary
- Survey area

Site:

Glebe Farm

Map title:

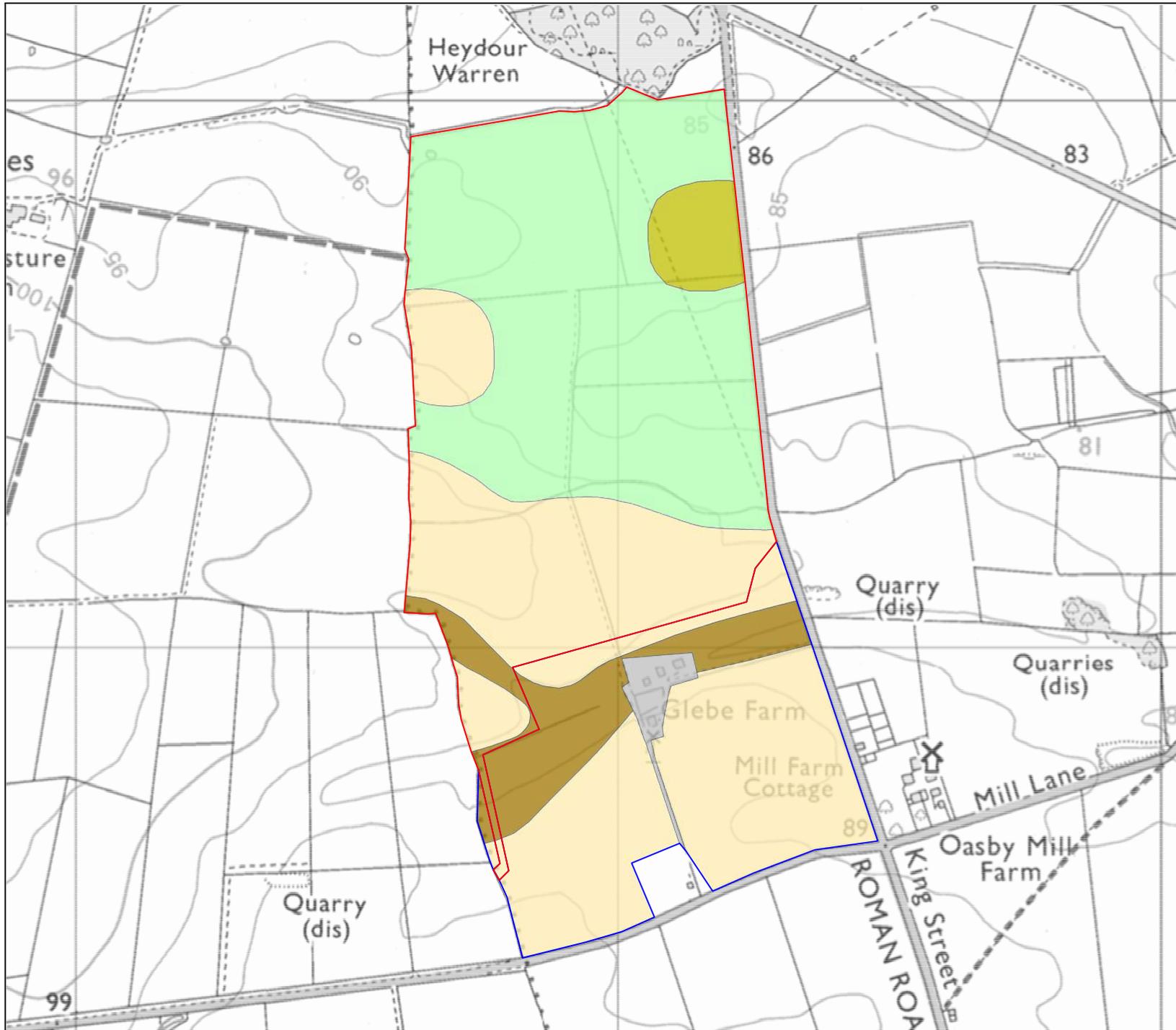
MAP 1
Observations



Date: 04/04/2025

Tapton Innovation Centre
Brimington Road
Chesterfield
S41 0TZ
www.lra.co.uk

Scale: 1:10,000



KEY

- Slowly permeable clay soils
- Brashy clay soils
- Shallow soils over limestone
- Deeper soils over limestone
- Site boundary
- Survey area

Site:

Glebe Farm

Map title:

MAP 2
Soil Types

**Land
Research**
ASSOCIATES

Date: 04/04/2025

Tapton Innovation Centre
Brimington Road
Chesterfield
S41 0TZ
www.lra.co.uk

Scale: 1:10,000