



**AGRICULTURAL LAND QUALITY REPORT
LAND AT
WILLOWS FARM
LONGRIDGE
PRESTON
PR3 2TG**

**Prepared: 13th December 2013
For Barratt Homes**

**Prepared by
Matthew Burton, BSc (Hons), MRICS FAAV
And
Becky Evans BSc (Hons) MRICS
FISHER GERMAN LLP
CHARTERED SURVEYORS
4 Vicar's Lane
Chester, CH1 1QU
Telephone: 01244 409660**

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1. Summary

- 1.1 A study and survey of the land located directly to the north of the centre of the settlement of Longridge, Lancashire, was inspected by Fisher German on Tuesday, 10th December 2013. The land, which is in two ownerships and occupied by two different farmers, comprises of 10 separate field enclosures extending in total to approximately 56.7 acres (22.9 hectares). The majority of the land is down to permanent pasture and is used for livestock grazing with some limited silage production. Three of the fields on the western boundary alongside Sainsbury's supermarket, Longridge Road and the cricket ground are in long-term permanent pasture grass leys having been re-seeded within the last 10 years. These fields were being grazed by sheep at the time of the inspection.
- 1.2 The land slopes from the highest point at Willows Farm along the northern boundary of Longridge and slopes down to Longridge Road and the cricket ground. The fields adjoining the north of Longridge slope steeply down to a number of large field drains shown in blue on the enclosed plan at **Appendix 2**. Those three fields adjoining the cricket ground and Longridge Road are level, however are undulating throughout. There are several hollows and ponds across the block of land and a number of field drains and ditches. Those permanent pasture fields were being grazed by sheep at the time of the inspection. The land had obviously been grazed and silaged throughout the summer as there was minimal grass cover. The three most recently re-seeded fields had a good covering of grass. Weather conditions on the date of the inspection were dry and clear. The fields which sloped from Willows farm were dry. However, within the fields in the bottom of the valley along Longridge Road and the cricket ground there were several very wet patches. Surface water was lying in a number of areas.
- 1.3 The predominant soil type is a slowly permeable, seasonally wet acid loamy and clayey soil. Fertility is moderate to low and land cover is typically seasonally wet pastures and woodlands, drainage is impeded and the predominant soil texture is loam. The appearance of the soil when inspected was predominantly clay loam across the block of land. The land is classified as Grade 3 on the Ministry of Agriculture Fisheries & Food (MAFF) Soil Survey of England and Wales 1968. Following the original classification surveys, a number of sites within Lancashire were re-surveyed following the introduction of the 1988 Agricultural Land Classification (ALC), surveying methods, resulting in many sites being previously of Grade 3 being split into sub-grades 3A and 3B. This specific site was not re-surveyed and the information is not available into the sub-grades of 3A or 3B.
- 1.4 The landscape character type is not defined on Magic Maps, DEFRA publication; however the property sits within a landscape of rolling and undulating areas above 1,000ft. The typical land type is hill ground and moorland. However, the land at Willows Farm sits on the hills sloping down to the valley bottom. The land cover would be typically described as heavy associated with base poor clayey and loamy soils where seasonal waterlogging is a main constraint to agricultural production on this ground type. The land cover is typically of permanent pasture. The broad land use within the area is livestock rearing and low input low output dairy farming.
- 1.5 The site at Longridge was not re-classified and re-surveyed and was therefore not split between sub-categories 3A and 3B. The overall land classification is of Grade 3. Based on research carried out, no land within the immediate surrounds of Longridge has been re-classified into either sub-categories 3A or 3B. Certain areas to the east, south and west of Preston were re-surveyed and have been split between the various

sub-categories. On the original MAFF publication map, as shown in **Appendix 5**, the majority of the area surrounding Longridge and that to the west, south and north is identified as Grade 3. There are further large swathes of land of Grade 2 situated further to the west around Kirkham, Myerscough, Hambleton, Fylde, Preesall and Hambleton. To the east of Longridge into the uplands and the moorland, the land classification is Grade 4 and 5.

- 1.6 This report, whilst providing descriptions on soil profiles observed, will comment on the physical characteristics of the land and how they interact with agricultural operations, but will not analyse the soil samples wetness and droughtiness characteristics. The report will not look to re-classify the current ALC grade, however, will comment and make recommendations on what the classification ought to be.

2. Introduction

- 2.1 Fisher German were instructed by Barratt Homes to carry out a land quality assessment of the 56.7 acres of agricultural land which sits directly to the north of Longridge and to the east of Longridge Road. A location plan is enclosed at **Appendix 1**. The area of land included within the report is shown outlined red on the enclosed site plan at **Appendix 2**. That area outlined red and hatched blue is land owned and occupied by Mr Procter of Willows Farm. That area hatched green is occupied by Mr Procter and owned by the Estate of the Late George Newsham Deceased and the area hatched orange is again owned by the same Estate but occupied by a different Mr Procter. The majority of the land is down to permanent pasture. However, the three fields adjacent to the superstore, Longridge Road and cricket ground were re-seeded within the last 10 years.
- 2.2 The report provides information on soil resources, agricultural quality and comments on the current use of the land and provides opinions of the agricultural quality of the land based on the physical characteristics of the site. The report is based on a desktop survey of the soils and climatic conditions affecting the site. The survey also includes opinions from the surveyors following a walk over of the land carried out on Tuesday, 10th December 2013. Soil samples were taken and visually assessed and comments made. No samples have been submitted for laboratory examination.

3. Situation

- 3.1 The parcel of land lies directly to the north of the centre of the settlement of Longridge. The land is either accessed off Willows Park Lane through the farmyard at Willows Farm to the south of the block of land or through a number of field gates off Longridge Road which bounds the block of land on the west. The northern and eastern boundary adjoins farmland and the southern boundary of the land adjoins the residential estates of Longridge.
- 3.2 Longridge is a small town in the borough of the Ribble Valley in Lancashire. Longridge is situated approximately 8 miles to the north-east of the city of Preston at the western end of Longridge Fell and Longridge is to the north of the River Ribble. Junction 32 of M6 motorway where the M55 joins is approximately 7 miles to the west of Longridge. Blackburn is situated approximately 10.7 miles to the south-east with Clitheroe situated approximately 10 miles to the east. The Parish of Longridge had a population of approximately 7,500 recorded in the 2001 Census.
- 3.3 The town is home to 11 pubs, 7 restaurants, a public library, a number of primary and high schools and a number of large supermarkets.

- 3.4 The block of land can either be accessed from Willows Farm off Willows Park Lane and Chaigley Road or off Longridge Road which adjoins the boundary on the west. There are a number of 12ft gates directly onto the highway. The postcode for the block of land is PR3 2TG and the grid reference is SD60598 38050.
- 3.5 According to the Environment Agency Flood Risk maps, the block of land lies outside of the identified flood risk area from rivers and sea but the block of land in parts is at risk of surface water flooding. A copy of the Flood Risk Maps are contained in **Appendix 3**.

4. Methodology Field Work

- 4.1 A desktop study of existing soils and climatic information was undertaken followed by a detailed field work study to assess soil types and land types. The land was classified using the system outlined in the MAFF, now a DEFRA publication – Agricultural Land Classification of England & Wales – Revised Guidelines and criteria for grading the quality of agricultural land (October, 1988).
- 4.2 Field work was undertaken with a hand-held Dutch soil auger measuring 120cm. Across the parcel of land, 54 samples were taken up to an impenetrable layer. All the borings were taken at intervals equidistant from each other covering the land as shown on the site plan at **Appendix 2**. From the soil profiles taken a visual assessment was made to determine the characteristics of the soil. Samples from each auger boring site were taken and the profiles inspected. Photographs showing the soil profiles from each sample point can be seen at **Appendix 4**. A visual inspection of each soil sample was taken but no samples have been submitted for laboratory analysis.

5. Results

- 5.1 The provisional Agricultural Land Classification map shown at **Appendix 5** identifies one grade of land across the site. The ALC grade is identified as Grade 3. Under the MAFF Agricultural Land Classification system, land is graded according to the degree to which certain physical characteristics; in particular climate, relief, and soil impose long-term limitations on agricultural use. It is clear that the most versatile and productive land in the area that of land classification Grade 2 is situated to the west around the settlements of Kirkham, Great Eccleston, Pyling, Poulton-le-Fylde Myerscough, Fylde, Preesall and Hambleton. A full description of the classification and the criteria used to determine the grades can be found in the published MAFF report, an extract of which can be seen in **Appendix 6**.
- 5.2 Certain sites across the country were re-surveyed following the original 1960's surveys and subsequently the post-1988 Agricultural Land Classification maps have been published which show a breakdown of Grade 3 into sub-categories 3A and 3B. The site in Longridge was not re-surveyed and having further detailed discussions with Natural England, and having viewed the re-surveyed results on www.magicmaps.gov no further information is available as to whether the Grade 3 classification should be categorised as 3A or 3B. The sites within the region that were re-surveyed are to the east, south and west of Preston only.
- 5.3 It would appear from the land classification and what was observed during the inspection that the better, most versatile agricultural land, capable of growing a wide variety of crops is situated to the west of Longridge within the bounds of the M6, M55

and A585 running north towards Pyling and Crockerham. Further east from Longridge towards Clitheroe, agricultural use is restricted to cattle and sheep grazing only on the hills and moorlands.

5.4 Grade 3A is identified as “good quality agricultural land” and Grade 3B designated as “moderate quality agricultural land”. Grade 2 is identified as “very good agricultural land”. As mentioned, a full description of all the ALC grades is attached at Appendix 6. The majority of the site is classified as Grade 3, which is defined as “good to moderate agricultural quality land”. This is defined as land with moderate limitations which affect the choice of crops, timings and type of cultivation, harvesting or level of yield. Where more demanding crops are grown, yields are generally lower or more variable than on Grade 1 and 2.

5.5 The best and most versatile land is defined as Grades 1, 2 and 3A by planning policy guidance.

5.6 Assessment of agricultural land is based on the long-term, physical and chemical properties of the land as to how they may restrict its use. Land is graded from best (Grade 1) to worst (Grade 5). Such restrictions might include:-

- The range of crops that can be grown
- Yield levels
- Consistency of yield
- Cost per yield

These restrictions are governed by factors such as:-

- Climate: temperature, rainfall, aspect, exposure and frost risk
- Site: Gradient, micro-relief, and flood risk
- Soil: Texture, structure, depth and stoniness

5.7 The above factors therefore have been taken into consideration when arriving at the various conclusions.

6. Climate

6.1 The closest weather station to Longridge is situated at Stonyhurst, approximately 6.7 miles to the east. Available on the Met Office website are the average climatic data for the period 1981-2010. Summarised below are the main climatic parameters used in the determination of land quality.

Table 1 – Climatic Parameters

Site at Longridge, Lancashire	
Grid Reference	SD60598 38050
Altitude (range)	123m down to 103m
Average annual rainfall	1294.2mm
Average high temperature	12.7°C
Average low temperature	6.1°C

(Data sourced from www.metoffice.gov.uk – information has been calculated using data collected for the period 1981-2010 from the nearest weather station to the site's postcode).

- 6.2 In common with most of the rest of the UK, Longridge has an oceanic climate which generally features warm but not hot summers and cool but not cold winters with a relatively narrow annual temperature range as indicated. There are rarely any long prolonged dry periods as precipitation is generally evenly dispersed throughout the year. The highest average rainfall months are October, November and December where the average precipitation is 140mm per month. The lowest precipitation month is April with an average of 66mm. The results show an annual average rainfall of 1294mm, this indicates that this landscape is only suited to livestock grazing and growing grass for silage. England's average annual rainfall for the period 1981 to 2010 is 854.8mm. The percentage increase in the average annual rainfall in Longridge is 51% compared to England's average.
- 6.3 Water requirements for crops such as winter wheat are typically 450mm-650mm depending on the length of the growing season and for potatoes is between 500mm-700mm. This high rainfall is therefore well above the water requirements for these crops.
- 6.4 The temperature range, as indicated does not impose any restrictions on crop growth. The optimum mean daily temperature for wheat and potato growth is 18°C-20°C. According to the climatic data, the average high temperature is only within this range between the months of June through to August.
- 6.5 The combination of rainfall and temperatures as indicated identifies that the site is only capable of growing a narrow variety of crops; this is on the basis that the soils are free draining but hold sufficient water to reduce drought stress in the crops.
- 6.6 Climate has a major influence on land quality by affecting both the range of crops that can be grown and the cost and level of production. The effect on plant growth occurs partly through interactions with the soil and therefore the interactions between climate and the soil type is key. If the land remains wet and saturated for long periods access and the cost of cultivations and harvesting will be too high to be economically viable to grow many crops. The high rainfall is therefore a key limiting factor to agricultural quality.

7. Gradient and Flood Limitations

- 7.1 The land in Longridge slopes from the north of the town down towards Longridge Road along the northern boundary of the block of land. However, the bottom fields adjacent to Longridge Road are low lying and underfoot conditions during inspection were wet. There are several hollows and wet patches throughout the land and a number of large ditches and drains running south to north across the property. Although the land slopes down from the northern edge of Longridge, the gradient does exceed 11° and therefore gradient does not have a significant impact or restrict its agricultural use. The majority of the land is ploughable. Table 2 below gives the gradient limits for each grade and sub-grade and land.

Table 2 – Grade according to gradient

Grade/sub-grade	Gradient limits (degrees)
1	7°
2	7°
3a	7°
3b	11°
4	18°
5	> 18°

7.2 As detailed above, none of the land within the ring fenced block exceeds the 11° and therefore exceeds the Grade 3B classification.

7.3 According to the Environment Agency Flood Risk maps, all of the land lies outside the identified flood risk area from rivers and seas. It should be noted, however, that in the land adjacent to Longridge Road there are number of low lying pits and fields drains and underfoot conditions were wet with surface water standing on those fields. The flood risk map for surface water indicates a risk of flooding over certain sections particularly on the northern sections of the land. Some of the land falls in the high risk category. High risk means that each year, this area has a chance of flooding of greater than 1 in 30 (3.3%). This type of flooding can be difficult to predict, much more so than river or sea flooding as it is hard to forecast exactly where or how much rain will fall in any storm. The Flood Risk maps can be viewed in **Appendix 3**.

8. Soil and Interactive Limitations

8.1 It appears that there is one main Soil Association mapped over the site at Longridge. The predominant soilscape identified on the Soilscales Viewer Report taken from Cranfield University National Soil Resource is shown at **Appendix 8**. The soilscape identified is a slowly permeable, seasonally wet, slightly acid but base rich loamy and clayey soil. Fertility is moderate with habitats typically of seasonally wet pasture and woodland. Land cover is grassland and arable with some woodland. Texture is loamy and this soilscape covers approximately 19.9% of England. Drainage is impeded.

8.2 The soil type identified spreads both south and west of Longridge and covers the majority of the region. There is a ridge of slightly acid loamy and clayey soil with impeded drainage to the north-west of the site where drainage is slightly improved and fertility is higher. The land cover typically is arable and grassland. The predominant soil type to the north is slowly permeable, seasonally wet acid, loamy and clayey soils where fertility is low. Predominant texture is loam and soilscape covers the hill and moorland to the north of Longridge. To the south there is a vein of freely draining flood plain soil of very high fertility with land cover typically of arable and again to the south there is a ridge of fertile, slightly acid loamy and clayey soils with better drainage

8.3 What was observed during the inspection confirms that the soilscape, as identified by the Cranfield University National Soilscales was correct. The clay content within the samples taken increased the further down the farm from the farmyard at Willows Farm down to Longridge Road. Clay was found in almost every sample taken however. Typically pure clay was present, on average, at a depth of 25cm – 20cm. Above this, the texture was predominantly loam or clay/loam. However, it was observed that it was a heavy textured soil throughout. The impenetrable layer that was hit ranged across the site from the deepest sample at 73cm and the shallowest

at 15cm. The deepest sample was taken on the lower lying ground. The majority of the samples appeared light brown in colour indicating a low content of organic matter content. A lot of the clay samples were grey and yellow and light in colour, some being bluey/grey. A number of the samples containing clay were very water logged, wet and malleable. The fact that clay is present implies poor permeability and impeded drainage. It is clear that the soil suffers from being seasonally wet, especially those fields in the lower lying areas adjacent to Longridge Road. It is clear the soil suffers from being seasonally wet which can limit and interrupt agricultural operations. It is assumed and appears that there are a number of field drains. However, the farmer confirmed these were very old and drainage was an issue.

8.4 All the boring samples were taken from land on Tuesday, 10th December 2013. Weather conditions were cool, dry and clear. Underfoot conditions were a mixture of dry and wet with the dry underfoot conditions being at the top of the farm, becoming wetter and more saturated down towards Longridge Road.

Table 3 – Soil Sample Observations

Sample No.	Depth (cm)	General Observations
1	40cm	Light brown in colour loam, texture heavy, down to pure clay, grey and blue in colour. Clay sample was 0cm – 15cm on the auger. Auger resistance – medium.
2	53cm	Light brown colour, loamy texture from ground level down to 33cm. 20cm down to 0cm clay loam texture. Tip pure clay, yellowy grey colour. Auger resistance – easy.
3	42cm	Light brown, loam texture. Not much clay throughout sample. Auger resistance – medium. Soil not malleable. However, heavy loam.
4	40cm	Loamy texture, then loamy clay and then finally pure clay 10cm down to the tip. Soil profile was moist throughout. Clay colour was light yellow, less clay than in samples 1 & 2. Auger resistance medium.
5	40cm	Darker brown loam throughout. Consistent colour throughout the sample. Heavy loam. Small amount of clay at the tip. Auger resistance – medium to hard.
6	36cm	Dark brown loam. Clay texture from 24cm down to 0cm. Clay was yellow and grey in colour and was dry. Auger resistance was hard.
7	38cm	Darker loam running into clay loam texture and then pure clay at 18cm in depth down to the tip. Clay colour was red at the end. Auger resistance hard.
8	37cm	Light brown colour, clay/loam texture present, clay/loam at the tip. Auger resistance – medium.
9	39cm	Dark brown colour loamy texture, clay present from the tip up to 15cm. Auger resistance – medium.
10	38cm	Loamy texture into clay from the tip of the auger to 18cm was yellowy/grey clay, very dense, malleable, red speckles throughout clay section. Auger resistance- medium to hard.
11	46cm	Dark brown loamy texture. Clay from tip of the auger to 25cm. Malleable, moist clay. Loamy sample was heavy. Auger resistance – medium.
12	41cm	Dark loamy texture, ground level down to 31cm then very

Sample No.	Depth (cm)	General Observations
		clayey and black. Possible signs of peat at the very tip. Auger resistance – hard.
13	33cm	Dark loam into clay loam into clay. Clay was yellow grey with specks of red. Auger resistance – very hard.
14	40cm	Lighter brown loam texture, although heavy. Clay present from 0cm up to 20cm on the auger yellowy grey clay. Auger resistance – medium.
15	48cm	Dark loam colour, loamy to loamy/clay texture. Fine sand particulars at the very tip. Sand was light grey/yellow colour. Auger resistance – medium.
16	64cm	Light coloured, loamy texture into clay at 25cm in depth down to 15cm on the auger and then from 15cm on the auger to 0cm at tip. Sandy texture, grey colour. Clay and sand were waterlogged. Sand particle were large. Auger resistance – very easy.
17	33cm	Loamy texture, light in colour, although heavy in texture, clay at the tip. Auger resistance –medium.
18	40cm	Light brown coloured loamy texture in to clay loam into pure clay. Pure clay hit at a depth of 28cm. Auger resistance medium.
19	73cm	Deepest sample. 73cm down to 35cm and the auger showed a light coloured loam, heavy in texture then from 35cm down to 0cm at tip, very hard, waterlogged clay. Clay was blue/grey, malleable and very moist. Auger resistance – easy.
20	41cm	Light colour, grey brown colour into darker brown loam into clay at 30cm in depth. Clay was dark and heavy. Auger resistance - medium.
21	40cm	Dark colour loam, texture was grainy and granular towards the tip at the deepest point. No clay present. Auger resistance – hard.
22	38cm	Dry and light brown colour loamy texture down to a depth of 26cm and then heavy clay. Auger resistance – medium. Sample dry.
23	42cm	Light colour, loam texture. However, heavy loam, clay texture present at a depth of 20cm down to tip. Auger resistance – medium.
24	32cm	Light brown, heavy loam. Clay present at 15cm on the auger down to 0cm. Dry sample. Auger resistance – hard.
25	40cm	Very dark texture, heavy loam/clay. Clay almost black in colour. Auger resistance medium.
26	35cm	Light brown, loamy clay, heavy in texture. 20cm pure clay down to 0cm at the tip. Grey colour. Auger resistance – hard.
27	38cm	Light coloured brown loam. Loam from 38cm on the auger down to 20cm then pure clay. Auger resistance – easy.
28	39cm	Light brown loam. Heavy texture, however, clay at 16cm on the auger down to 0cm. Light grey/brown clayey colour. Auger resistance – medium.
29	46cm	Moist, heavy clay loam sample. Clay at 30cm on the auger down to 0cm. Auger resistance – easy.
30	50cm	Dark, wet heavy loam, clay at 25cm down to the tip. Dark and black specks throughout the clay along with red speckles.

Sample No.	Depth (cm)	General Observations
		Auger resistance - medium
31	37cm	Light brown, loamy texture into orangey yellow clay. Auger resistance - hard.
32	42cm	Light brown into grey clay. Clay layer started at 27cm below ground level. Auger resistance - medium.
33	38cm	Light brown, clay loam texture. Clay then from 28cm below ground level comprising grey yellow colour. Auger resistance - hard.
34	51cm	Very wet and dark, heavy loam. Clay at 21cm below ground level, very malleable heavy clay. Auger resistance - medium.
35	32cm	Dark, heavy loam. Clay present at 12cm on the auger down to 0cm. Very dry sample. Auger resistance - very hard
36	41cm	Dark loam, heavy clay. Clay at 21cm on the auger down to 0cm. Clay was very dark brown, dry specks of orange throughout clay sample. Auger resistance - medium.
37	30cm	Dark brown loam, heavy sample into clayey loam texture following by pure clay at the tip. Orange in colour. Auger resistance - hard.
38	37cm	Dark brown, heavy loam into pure clay at depth of 27cm down to deepest point, clay colour was lighter brown. Auger resistance - medium to hard, hit very hard rock at the impenetrable layer.
39	23cm	Loam was light brown in colour into clay loam texture into clay at 13cm in depth down to the deepest point. Clay colour was orange. Sample was overall dry. Auger resistance - easy but hit hard rock impenetrable layer.
40	15cm	Clay throughout sample. Hit an impenetrable hard layer. Auger resistance - hard.
41	38cm	Light brown loam into heavy clay loam texture into clay at 17cm below ground level to deepest point. Auger resistance - medium.
42	45cm	Dark heavy loam, clay into pure clay at 19cm below ground level. Clay sample was grey yellowy clay. Auger resistance - easy.
43	35cm	Very dark loamy colour. Heavy loam texture. Clay at 15cm on the auger down to 0cm. Very dark clay colour. Auger resistance - medium.
44	41cm	Dark brown, loam. Heavy loam texture. Clay at 29cm in depth. Clay colour was very dark throughout. Auger resistance - easy.
45	46cm	Dark, loam clay texture. Colour - dark. Pure clay at the tip. Lighter in colour - grey. Auger resistance - easy.
46	27cm	Dark brown, loamy clay throughout. Very heavy sample. Clay at the tip with red specks. Auger resistance - medium.
47	38cm	Light brown in colour, loam clay texture. However, texture heavy. Clay at the tip. Auger resistance - medium.
48	38cm	Light brown clay loam texture. Sample heavy, red specks in the clay in the tip. Auger resistance - hard.
49	36cm	Dark brown colour into lighter orange colour and red at the tip. Sample was heavy loam texture into clay. Auger resistance - easy.

Sample No.	Depth (cm)	General Observations
50	38cm	Colour brown to light brown. Loam/clay into clay texture at the tip. Auger resistance – medium.
51	40cm	Dark brown colour, heavy loamy texture into clay/loam then pure clay at the tip. Auger resistance – medium.
52	32cm	Dark brown colour, clay loam texture throughout sample. Auger resistance – easy.
53	35cm	Sample very wet 35cm – 25cm on auger. Dark brown colour. Clay from 25cm to tip. Auger resistance – easy.
54	35cm	Dark brown colour, loamy clayey dry sample into clay at 25cm in depth to tip. Auger resistance – medium.

- 8.5 Based on the information contained within the table and the observations made on the day, the predominant soil texture is clay/loam. However, interspersed with this throughout the site there are pure samples of clay at an average depth of approximately 25cm – 20cm below ground level. There were one or two samples containing sand but only at the very tip and at depth in excess of 50cm. All these factors and findings point to the fact that the site is as per the soils report and suffers from impeded drainage.
- 8.6 Due to heavy nature of the soil and the fact that clay is present throughout points towards impeded drainage. The fact that some of the samples of clay were grey/blue and light in colour shows seasonal waterlogging. It was observed that there are number of wet hollows and surface water standing in some of the lower lying fields. There a number of pits across the site with large open drains and closed drains running across the land. It is clear that the soil is seasonally wet in certain places from time to time. Some of the samples taken showed evidence of waterlogged loam or clay. A number of the clay samples were blue/grey and yellow in colour which is a reflection of its natural drainage state. Continued waterlogging produces this colour and is known as gleying.
- 8.7 Soil wetness and droughtiness were not tested. However, it was observed that the top soil would be fairly permeable due to its relatively large soil particle size. The topsoil predominantly comprising loam would be fairly free-draining however the clay/loam topsoil would be less free draining and would retain moisture. The clay/loam and clay subsoil where pans have formed are not permeable, signs of this were observed where the soil was blue/grey.
- 8.8 The median duration of field capacity days, moisture deficit and moisture balance of wheat and potatoes which define droughtiness limits for ALC grades was not assessed and is not covered in this report.

9. Land Use

- 9.1 The land is in two separate ownerships and is occupied by two different individuals. The area hatched blue is owned and occupied by a Mr Procter of Willows Farm. The area hatched green is occupied by Mr Procter but owned by the Estate of the Late George Newsham Deceased and the area hatched orange is again owned by the same Estate but occupied by a different Mr Procter.
- 9.2 The majority of the land extending to approximately 43.6 acres is down to permanent pasture. Mr Procter, the owner of Willows Farm, runs an extensive livestock rearing unit

with a flock of sheep and herd of store cattle. The cattle and sheep graze the land during the summer months with some fields kept back for silage production and are then grazed following silaging. Cattle are then housed during the winter and fed the grass silage whilst the sheep remain outside and graze throughout the winter months.

- 9.3 Mr Procter applies a 25:10:10 fertiliser compound and farmyard manure to the land. One cut of silage is taken from the two main silage fields whilst the rest of the farm is grazed.
- 9.4 The second Mr Procter occupies the remaining three fields adjoining Longridge Road, the cricket ground and the superstore uses them for grazing and silage production. These three fields had a good covering of grass during the inspection and appear to have been re-seeded certainly with the last 10 years with a grass/clover mix. Whilst there is a good covering of grass on these three fields, they were lying very wet with standing water in certain areas.
- 9.5 Fences on the boundary and internally were stockproof of a fashion, however, were in a dilapidated state due to their age. Certain areas had been patched but the boundaries did contain the stock. The land is either accessed from the south at Willows Farm along the northern boundary of Longridge or from the western boundary of Longridge Road either side of the cricket ground. There is one overhead cable running through the westerly most field towards the superstore. However, all poles were within boundaries. Various water troughs are present throughout, mostly within boundaries. It is assumed therefore, that the property has the benefit of mains water.
- 9.6 There are no public rights of over any of the land. However, it was observed during the inspection that a right of way is used on a regular basis due to the erosion on the ground by users from Redwood Drive on the southern boundary. A well-trodden footpath had developed running northwards towards the cricket ground. Other signs of trespass include a number of gates in the boundary from residential properties specifically those into the westernmost field adjacent to the superstore. Two gates from the end of gardens were observed allowing free access onto the land.
- 9.7 A number of manhole covers were observed in the fields adjoining the western boundary. It is assumed there is at least one water main/sewer however this has not been investigated. Physical obstructions such as water mains do restrict some cultivations and therefore have an impact on agricultural uses.
- 9.8 The block of land sits within a livestock rearing and low input, low output dairy farming land use system. Due to the soil type, climate and surface water flooding risk, arable cropping is restricted to those lower lying and well-drained fields. The predominantly clay/loam texture which is present within the block of land is capable of holding nutrients. However, with the high clay content which is hard and not permeable, this can lead to waterlogging which was observed. Although a loamy textured soil is suitable for growing crops, the clay content and heavy nature of the loam means that the soil becomes sufficiently wet as some cultivations may not be possible for many months of the year meaning that spring crops may need to be established which are less economically viable. A lot of that land along Longridge Road could not be driven on by heavy machinery in the early spring, autumn or winter. These factors are serious limitations to agricultural production and economic output. To improve drainage, new land drains could be installed. However, this would come at a very high cost and will probably prove to be uneconomically as it is classified at Grade 3.

- 9.9 The high annual average rainfall as identified earlier means that continued saturation of the ground and possibility of flooding in the lower parts would mean access to the land during cultivation and harvest periods could be restricted. This combined with a heavy land type restricts the use of the land. Lighter land of Grade 3A and 2, which has been identified to the west, would be capable of growing a larger variety of crops and can be used for a wider variety of uses simply because the combination of the climate and soil type allows access for longer periods of the year in order to produce and harvest crops. Land of this nature is more economically viable to drain and add nutrients and fertility to. A larger range of crops can be produced which achieves higher increased gross margins than the like of lamb and store cattle production.
- 9.10 Attached at **Appendix 9** are a number of photographs taken across the site showing its current condition and use.
- 9.11 As stated earlier, the site as Longridge sits within a predominantly stock-rearing region. A lot of the land within the settlement of Longridge is permanent pasture grassland on sloping valley hillsides where the land classification, as identified in Appendix 5, is Grade 3.
- 9.12 There are no written records or plans of the field draining system. There are open ditches and closed ditches across the block of land. However the farmer advised that the site is susceptible to waterlogging after periods of rainfall at specific low points across the property. There are believed to be land drains that take surface water from the field. However, these are very old and no recent investigation has been carried out to determine how efficiently they are working.
- 9.13 As shown in Appendix 6, the ALC grade definition of sub-grade 3A defines land capable of consistently producing moderate to high yields of a narrow range of arable crops especially cereals or moderate yields of a wide range of crops including cereals, grasses, oilseed rape, potatoes, sugar beet and the less demanding horticultural crop. As discussed, due to the high level of annual rainfall and the soil type, it would be uneconomic grow cereals or potatoes on this land. It would also be physically difficult to harvest and cultivate cereal crops as access to the land due to its heavy nature and water holding capacity would mean establishing and maintaining high consistent yields of cereal crops would be very difficult.
- 9.14 Sub-grade 3B is defined as moderate quality agricultural land, capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
- 9.15 The land at Longridge is capable of producing consistent and reasonable yields of grass and is well-suited to grazing livestock and production of silage crops.
- 9.16 Soil wetness, although not tested is a measure of how wetness of the soil adversely affects plant growth and imposes restrictions on cultivations or grazing by livestock. The important of this limitation is reflected by the widespread use of and dependence on field drainage in both arable and grassland areas. Excessive soil wetness adversely affects seed germination and survival, partly by a reduction in soil temperature and partly because of anaerobism. It also inhibits the development of a good root system and can in extreme cases lead to plant death. Soil wetness also influences the sensitivity of the soil to structural damage and is therefore a major factor in determining the number of days when the soil is in suitable condition for

cultivation, access and trafficking by machinery or grazing by livestock. The severity of the limitation is influenced by the amount and frequency of rain in relation to evaporation along with the duration or waterlogging and the texture of the uppermost layer of the soil. In less permeable soils as with the one at Longridge, the degree of waterlogging depends in part on the depth at which the soil becomes less permeable. As identified the clay subsoil was identified at approximately 20cm-25cm below the ground level. Topsoil texture influences the wetness limitation because of its effect on soil water retention and the mechanical properties of the soil. Soils with a high clay content tend to retain more water than sandy soils and therefore are slower to return to a workable condition after wetting. Such soils are high in mechanical strength which further reduces the period during which they can be effectively cultivated. The wetness class has not been established, however, a reasonable judgement would access the wetness class in either 3 or 4. This would identify a land classification in the range of 3A to 4. Further research into duration of waterlogging would need to be assessed to determine exactly what the wetness class is.

- 9.17 It is clear, based on the Agricultural Land Classification Map at **Appendix 5**, that the best and most versatile land of Grade 2 and 3A situated elsewhere within the region. The most versatile land of Grade 2 can be seen to the west of the site at Longridge.

10. Conclusion

- 10.1 A study and survey of the 22.9 hectares (56.7 acres) of land situated at Longridge, Lancashire, has shown that land use is currently permanent pasture with grazing and limited silage production across the majority of the site.
- 10.2 The majority of the land, approximately 76.88% is in permanent pasture and is restricted to livestock grazing and limited silage production only.
- 10.3 The whole of the site is classified as Grade 3 under the MAFF Land Classification maps.
- 10.4 The site has not been split into either sub-grade 3A or 3B. However, it is the opinion of the surveyor that due to the high level of annual rainfall experienced within the region and the soil type as identified, the effect on plant growth due to the interactions with the soil type and climate means that the land would be re-classified as Grade 3B. The loam/clay textured soil suffers from waterlogging and would reduce the number of days when cultivations and harvesting could take place. Consistent yields of cereals or potatoes could not be achieved. But consistent yields of grass can be achieved which is part of the definition of land classification sub category 3B.
- 10.5 Government policy is to protect higher quality agricultural land with poorer grade land use as a preference. Sustainable development in rural areas defines the best and most versatile land as Grade 1, 2 and 3A. It is suggested therefore, based on the findings of this report that the land would identified as Grade 3B which would not fit into the bracket of higher quality agricultural land and therefore its loss to development would have a small impact upon agriculture in the region.
- 10.6 As identified, the best and most versatile agricultural land of Grade 2 is located to the west of the region.

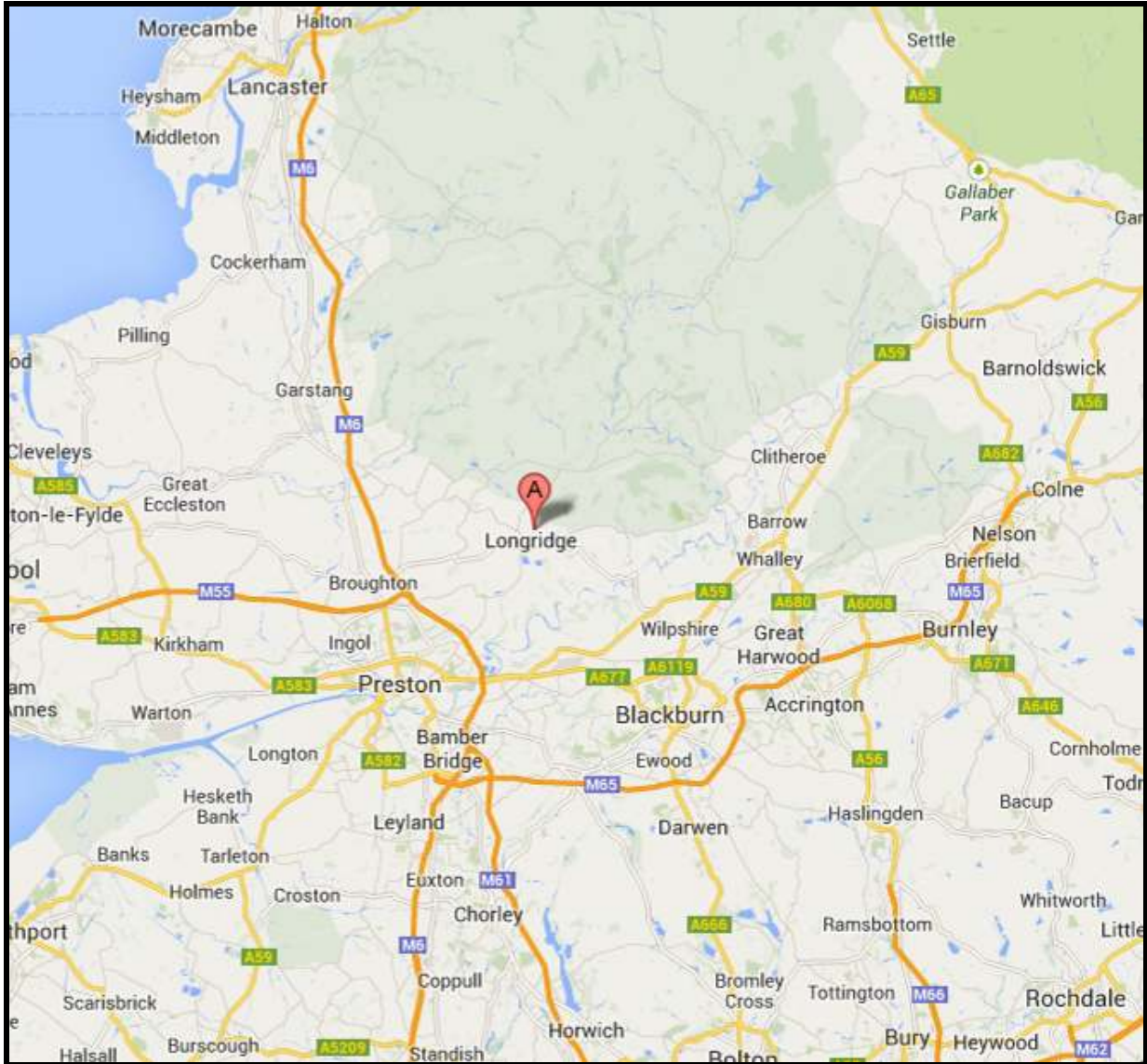
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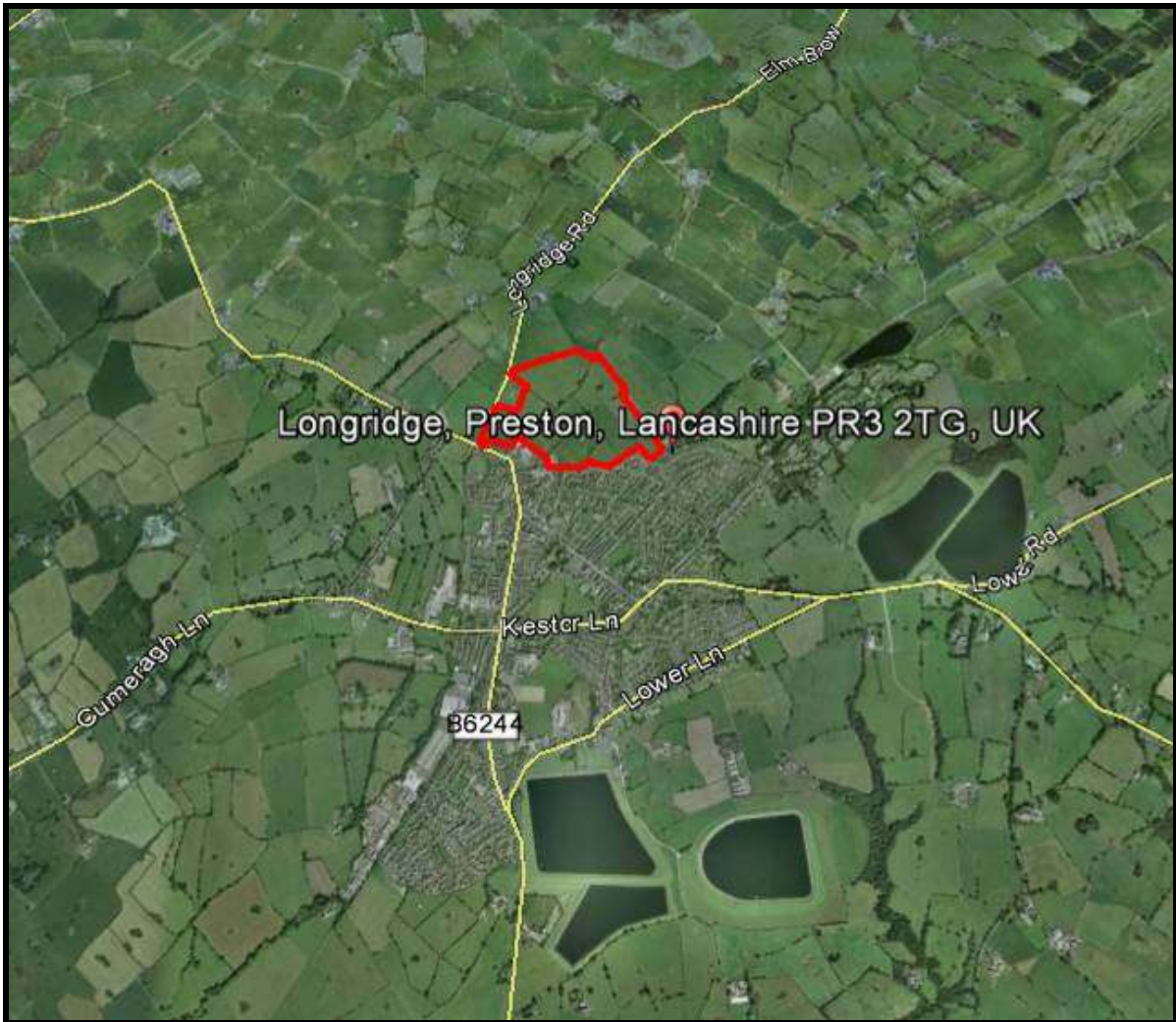
Matthew Burton BSc (Hons), MRICS FAAV
For Fisher German LLP

Signed Date.....

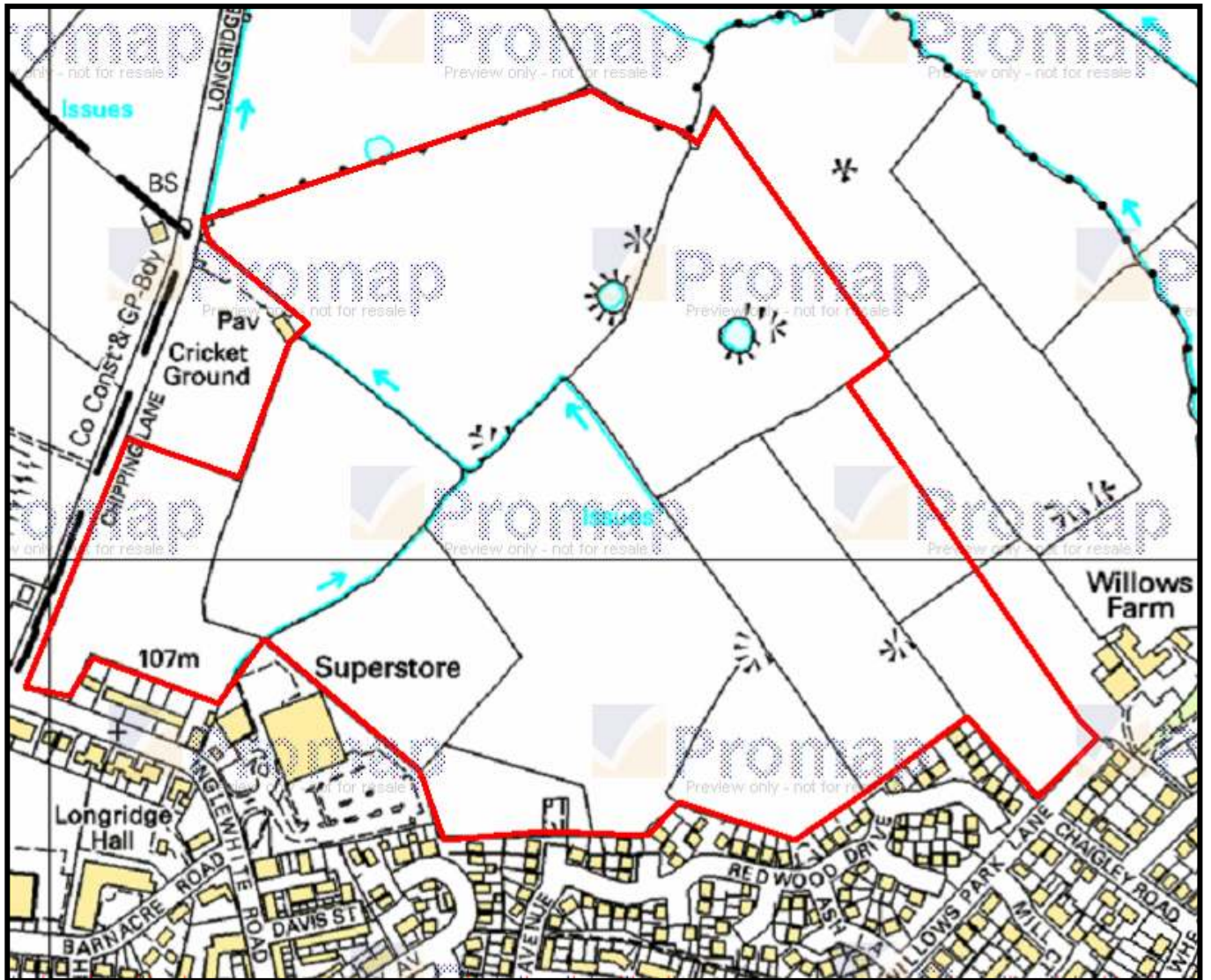
Becky Evans BSc (Hons), MRICS
For Fisher German LLP

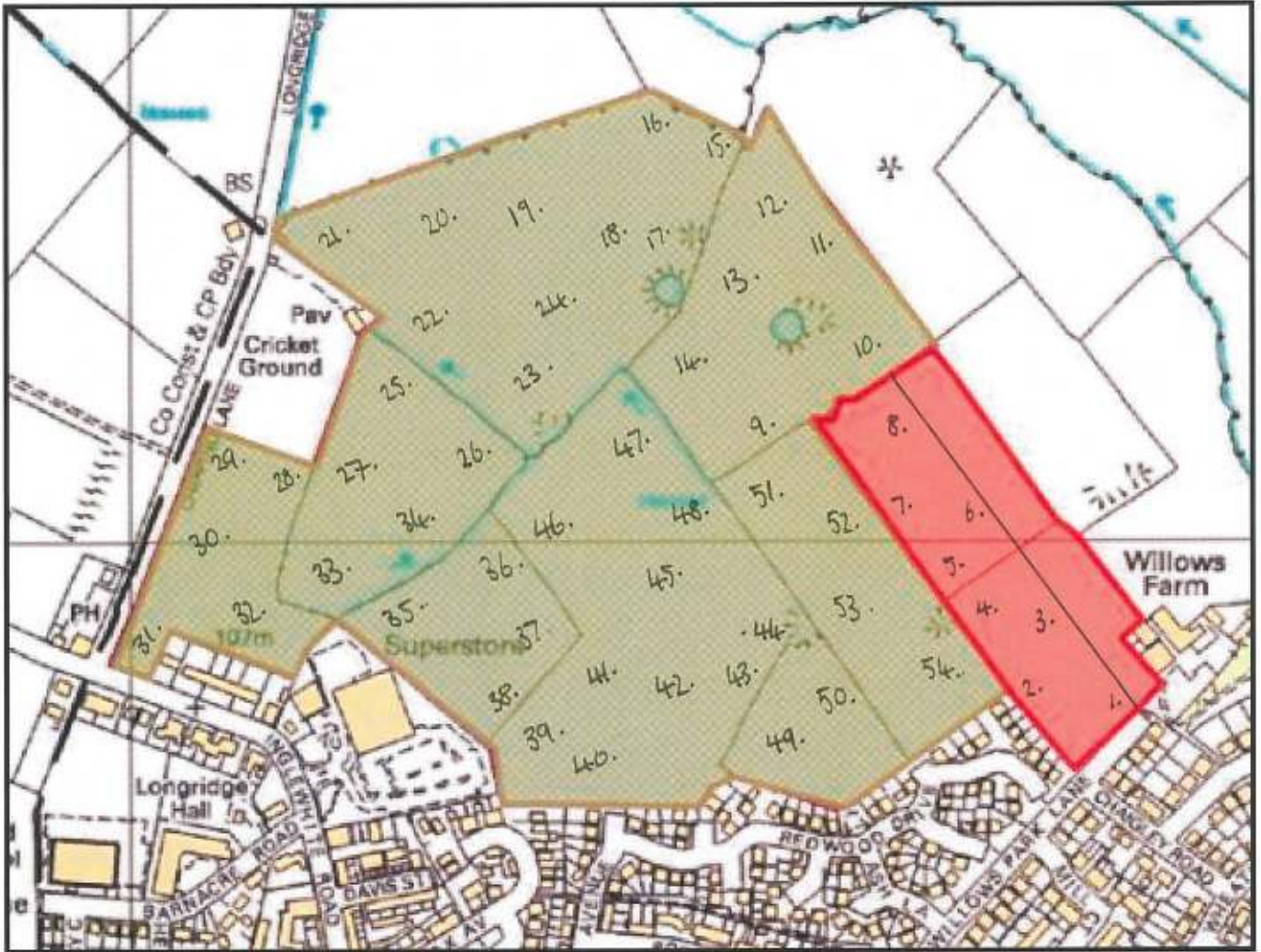
APPENDIX 1 – LOCATION PLAN

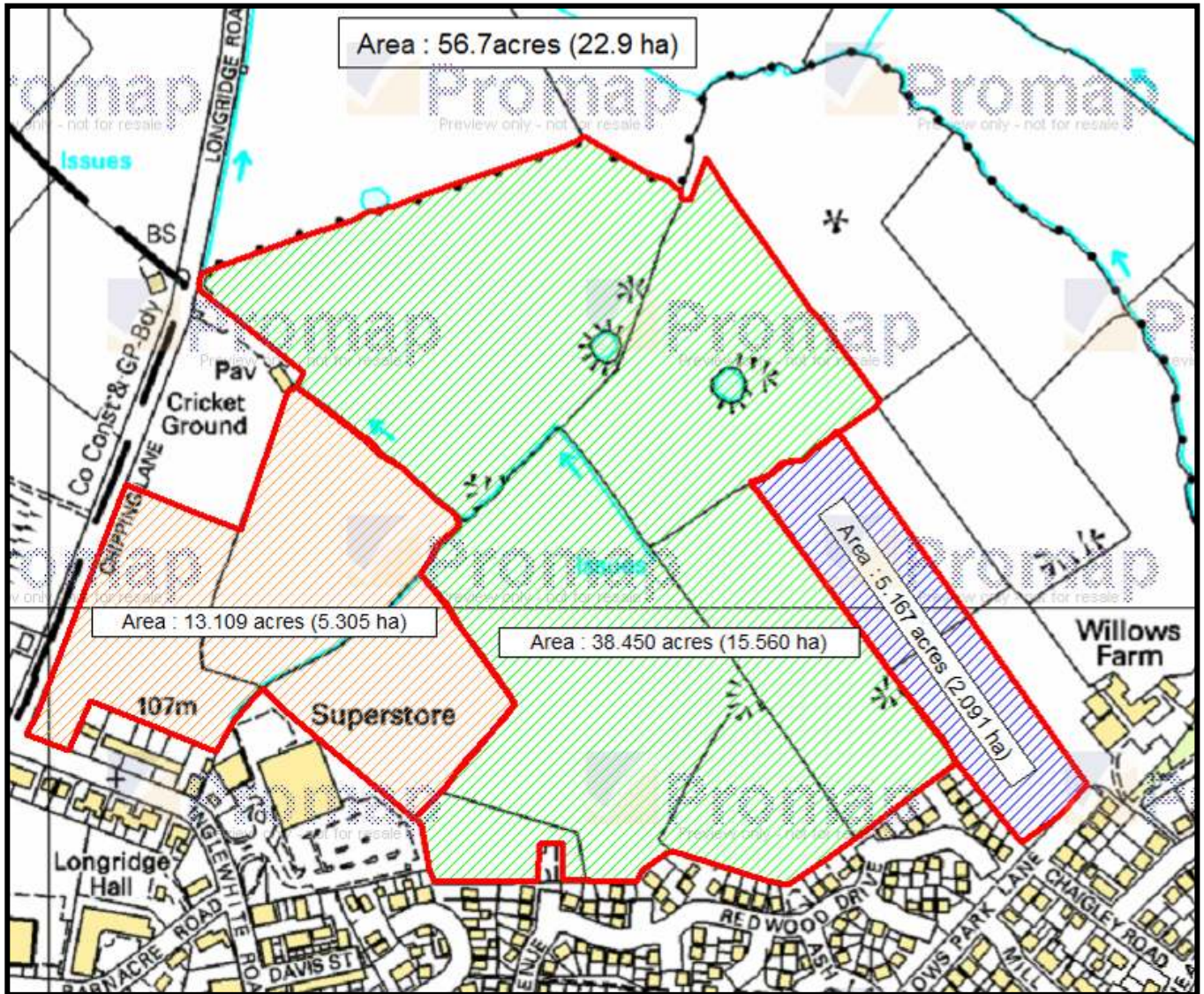




APPENDIX 2 – SITE PLAN

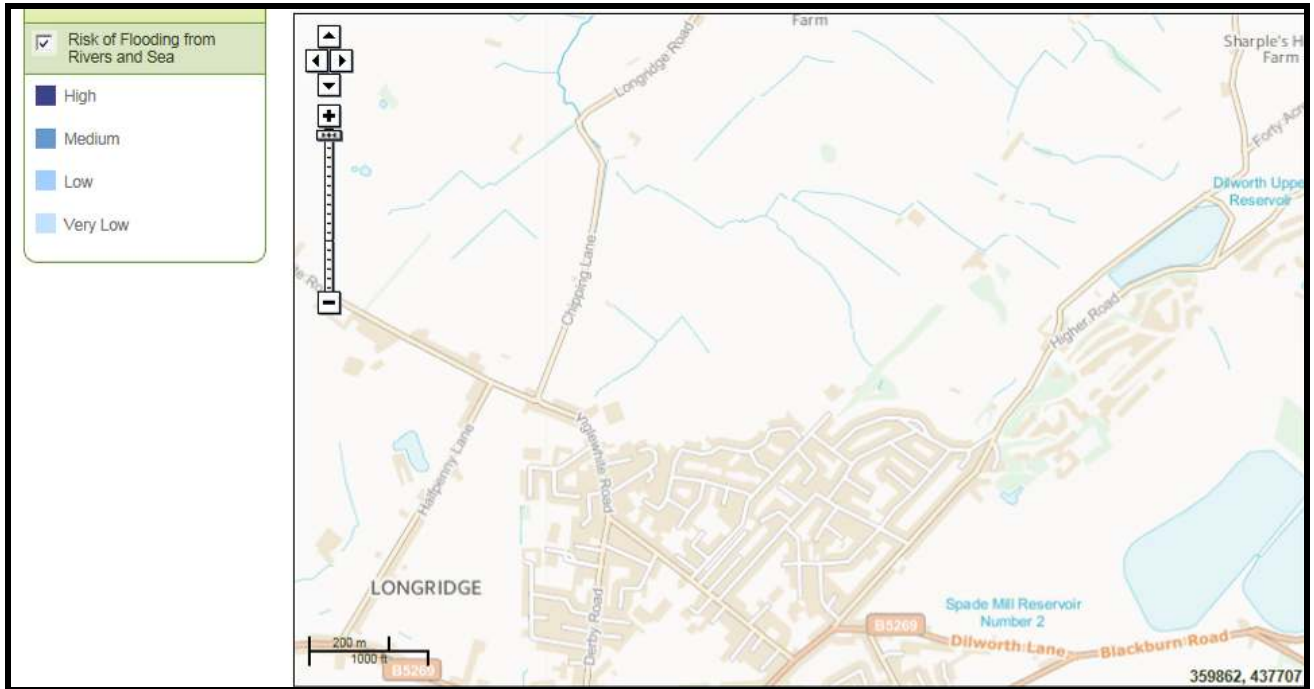




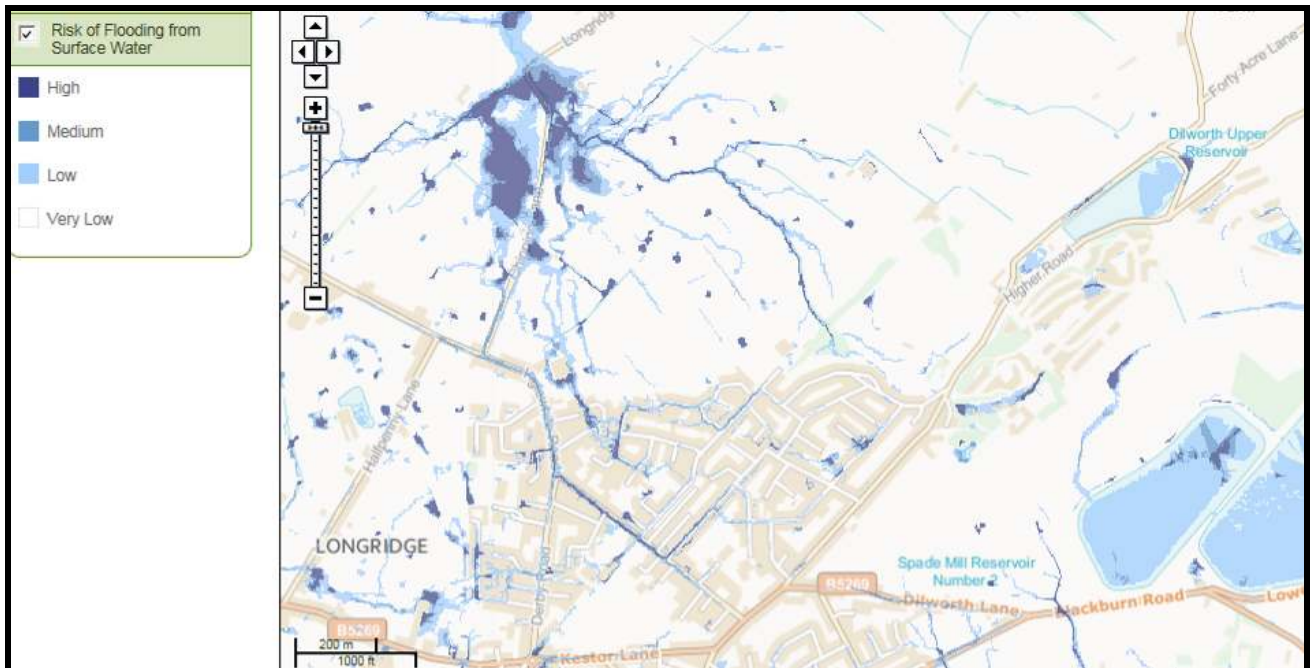


APPENDIX 3 – FLOOD RISK MAP

Flood Risk from Rivers and Sea



Flood Risk from Surface Water



High and Medium risk of surface water flooding

APPENDIX 4 – SOIL PROFILES

Site 1:





Site 2





Site 3



Site 4



Site 5



Site 6





Site 7





Site 8



Site 9





Site 10





Site 11



Site 12



Site 13



Site 14





Site 15





Site 16





Site 17



Site 18





Site 19





Site 20





Site 21





Site 22



Site 23





Site 24





Site 25





Site 26





Site 27





Site 28





Site 29





Site 30



Site 31





Site 32





Site 33





Site 34





Site 35





Site 36





Site 37





Site 38



Site 39



Site 40



Site 41



Site 42



Site 43



Site 44



Site 45



Site 46



Site 47



Site 48



Site 49



Site 50



Site 51



Site 52



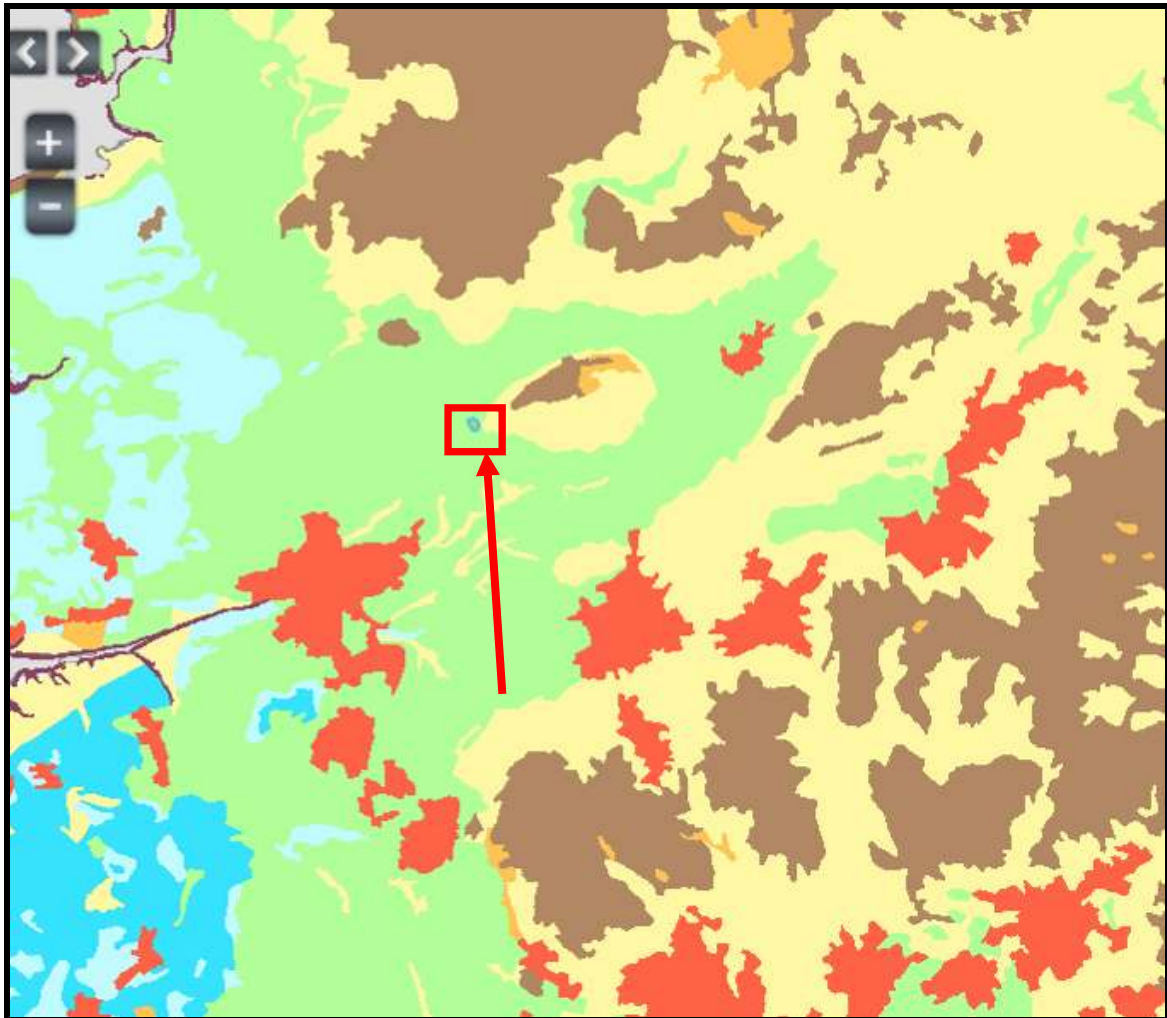
Site 53



Site 54



APPENDIX 5 – PROVISIONAL AGRICULTURAL LAND CLASSIFICATION MAP



Blue – Grade 2
Green – Grade 3 – Site at Longridge
Yellow – Grade 4
Red – Urban

NB – blue area within red box identifies postcode area and is not Grade 2 identification

APPENDIX 6 – ALC GRADE DEFINITION

GRADE 1 – excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality

GRADE 2 – very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

GRADE 3 – good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timings and type of cultivation, harvesting or level of yield. Where more demanding crops are grown yields are generally lower or more variable than on Grades 1 and 2.

SUBGRADE 3A – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

SUBGRADE 3B – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

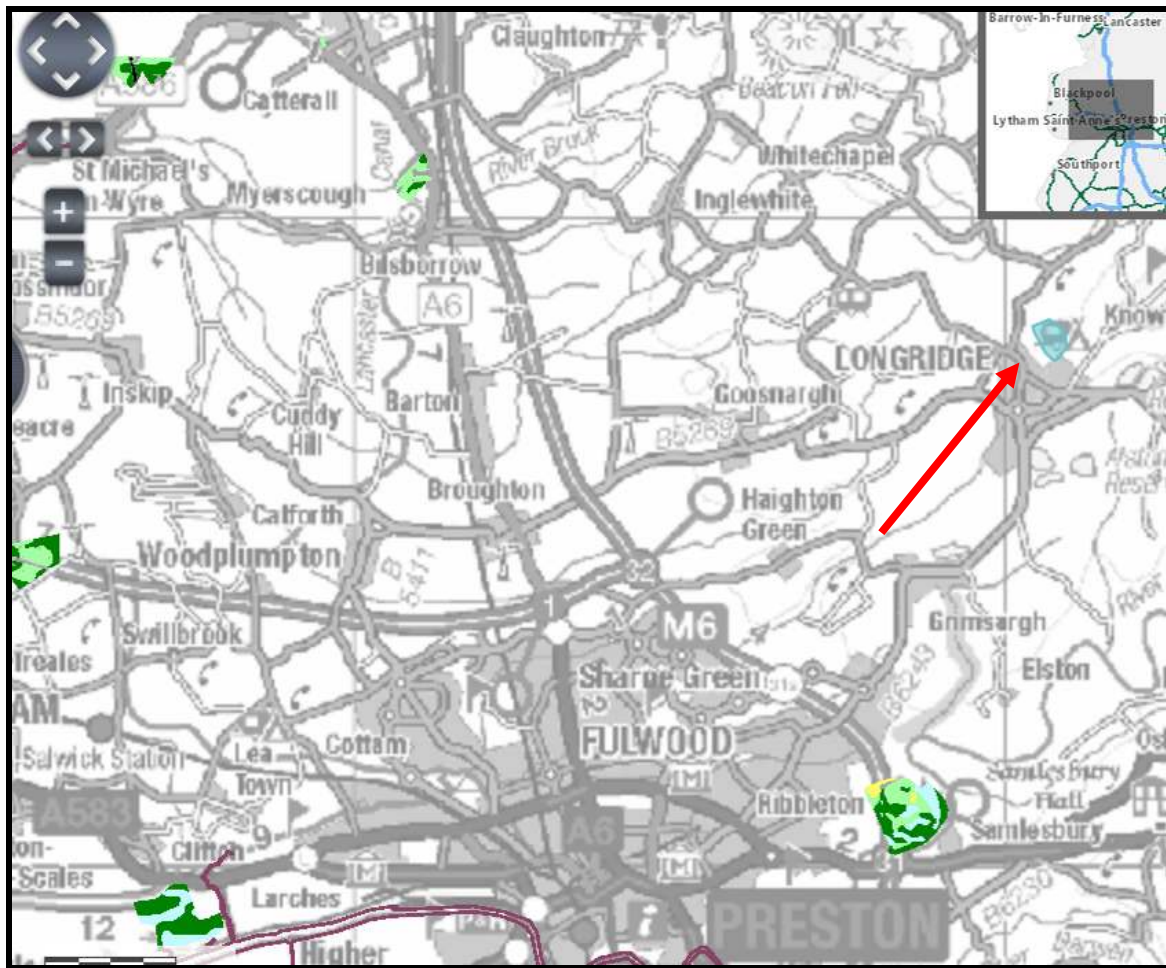
GRADE 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

GRADE 5 – very poor quality agricultural land

Land with very severe limitations which may restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX 7 – POST 1988 ALC SURVEY

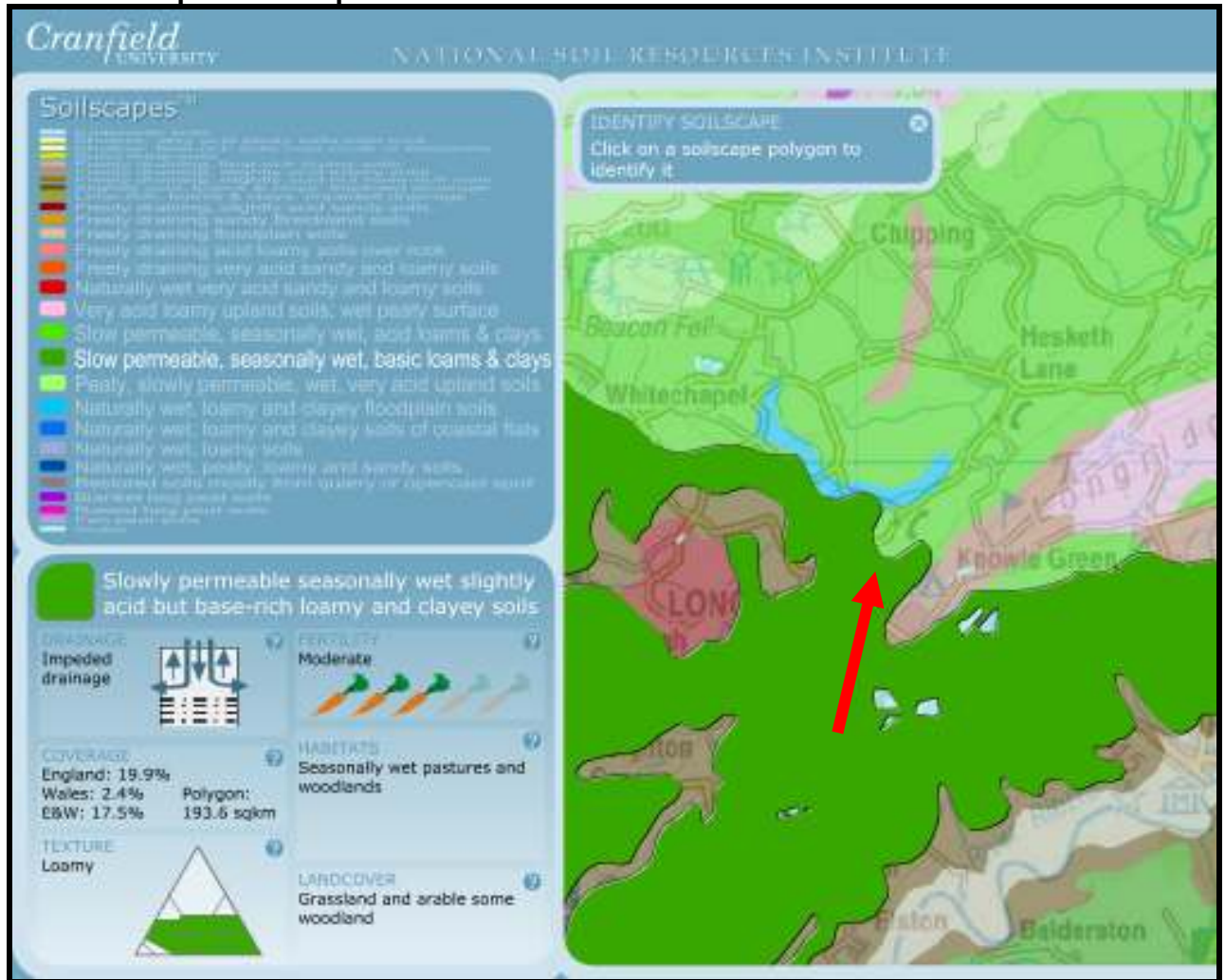


Only certain sites east and west and Preston were resurveyed and split between sub grades 3a and 3b.



APPENDIX 8 – SOILSCAPE REPORT

1. Principal Soilscape



Key points:

- Impeded drainage
- Moderate fertility
- Seasonally wet pastures

APPENDIX 9 – SITE PHOTOGRAPHS









































