

Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement Volume 2: Appendices

Appendix 11.3: Soils and Agricultural Land Quality Report

Document reference: 6.2.11.3

Revision: 03

November 2022

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:



The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

<https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/>

Appendix 11.3 ◆ Soils and Agricultural Quality Report

INTRODUCTION

- 1.1. This Soils and Agricultural Land Quality Report has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Tritax Symmetry (Hinckley) Limited (hereafter referred to as ‘the Applicant’), to inform the Development Consent Order (DCO) Application for the Hinckley National Rail Freight Interchange (HNRFI).
- 1.2. This Appendix should be read in conjunction with the following Annexes:
 - Annex 1 – Observation Points; and
 - Annex 2 – ALC and Soil Resources Survey.

Scope and Boundaries

- 1.3. Figure 13.1 (document reference 6.3.13.1) illustrates the extents of the Order Limits. This report considers the areas referred to as the Main HNRFI Site and the A47 Link Road on Figure 2.1 (document reference 6.3.2.1) noting that areas that contain non-agricultural land, particularly highways, are excluded from consideration.

Site Environment

- 1.4. The Main HNRFI Site and A47 Link Road principally comprise a mixture of arable land and grassland. The land is mainly level, with an area of sloping land in the south-west. The average elevation of the Main HNRFI Site is approximately 100m above Ordnance Datum (aOD) and average elevation of the A47 Link Road is approximately 90m aOD.

Agricultural Use

- 1.5. At the time of survey, the majority of the Main HNRFI Site was in autumn-sown cereals, with land in the south under grassland used to graze sheep and cattle. Approximately half of the Main HNRFI Site is registered to an Entry Level Countryside Stewardship scheme.

Published Information

- 1.6. 1:50,000 scale British Geological Society information records the solid geology of the Main HNRFI Site to be Mercia Mudstone Formation (mudstone). In the north and south of the Main HNRFI Site the mudstone is recorded as being overlain by superficial deposits of Bosworth Clay Member (clay and silt). An area of Thrussington Member glacial till overlies the centre of the Main HNRFI Site, with a thin band of alluvium in the east. The basal geology of the A47 Link Road is Mercia Mudstone overlain by Bosworth Clay Member (clay and silt).

- 1.7. The National Soil Map (published at 1:250,000 scale) shows the soils at the Main HNRFI Site and A47 Link Road to be within the Salop Association, gleyed soils over slowly permeable subsoils formed in reddish drift¹. The National Soil Map records the A47 Link Road also within the Salop Association, comprising slowly permeable seasonally waterlogged reddish fine loamy over clayey soils. These soils are typically imperfectly to poorly draining and give land limited by wetness restrictions.
- 1.8. Provisional Agricultural Land Classification (ALC) mapping of the Main HNRFI Site and A47 Link Road shows the land as grade 3. No more recent survey of the Main HNRFI Site and A47 Link Road (to current post-1988 guidelines) has been published.

SOILS

- 1.9. National Planning Practice Guidance states that the planning system should protect and enhance valued soils and prevent the adverse effects of unacceptable levels of pollution. This is because soil is an essential finite resource that provides important ecosystem services, for example, as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution.
- 1.10. A detailed soil resource and agricultural quality survey was carried out at the Main HNRFI Site in February 2018. The A47 Link Road was surveyed in November 2021. The surveys were based on observations at intersects of a 100m grid, giving a sampling density of one observation per hectare. During the surveys soils were examined by a combination of pits and augerings to a maximum depth of 1.2m. A plan of the sampling point locations is provided at Annex 1 and a log of the findings at each sampling point is provided at Annex 2.

Heavy Slowly Permeable Soils

- 1.11. Heavy slowly permeable soils make up the majority of the Main HNRFI Site and A47 Link Road comprising heavy clay loam topsoils over a dense slowly permeable clay subsoil that often becomes reddish at c.50cm depth and is calcareous in places. The subsoils show evidence of seasonal waterlogging (greyish mottled colours).

An example profile is described below from a pit at observation 61 (Map 1):

| | |
|---------|---|
| 0-31cm | Dark greyish brown (10YR 4/2) heavy clay loam; slightly stony with small and medium rounded hard mixed pebbles; moderately developed medium subangular blocky structure; firm to friable; non-calcareous; smooth clear boundary to: |
| 31-50cm | Yellowish brown (10YR 5/4) clay with common diffuse yellow (10YR 8/6), reddish yellow (7.5YR 6/8) and grey (10YR 6/1) mottles; very slightly stony |

¹ Ragg, J., M., et al, 1984. Soils and their use in Midland and Western England. Soil Survey of England and Wales, Bulletin No. 12, Harpenden.

with medium rounded and subrounded hard stones; weakly developed coarse prismatic structure; firm; non-calcareous; smooth clear boundary to:

50-120cm Reddish brown (2.5YR 6/4) clay with few; pale red (2.5YR 6/2) ped faces, few distinct fine white (2.5YR 8/1) mottles; slightly stony with small soft stones; weakly developed very coarse prismatic structure; firm; calcareous.

- 1.12. These soils are poorly draining (Soil Wetness Class IV) and have a low capacity to absorb excess winter rainfall.

Light Loamy Soils

- 1.13. Light loamy soils are located in the north-east of the Main HNRFI Site and comprise a sandy clay loam topsoil with a permeable upper subsoil of the same texture that is gleyed and overlies a slowly permeable clay lower subsoil.

- 1.14. An example profile is described below from a pit at observation 13 (see Annex 1 for location):

0-30cm Dark greyish brown (10YR 4/2) sandy clay loam; slightly stony small and medium rounded hard pebbles; well-developed fine subangular blocky structure; friable; smooth clear boundary to:

30-60cm Light brownish grey (10YR 6/2) sandy clay loam with many distinct reddish yellow (7.5YR 7/8) and white (7.5YR 8/1) mottles; slightly stony with small and medium rounded hard pebbles and few large subangular hard stones; weakly developed medium subangular blocky structure; friable; smooth gradual boundary to:

50-120cm Reddish brown (5YR 5/4) clay/sandy clay with common distinct reddish yellow (7.5YR 6/8) and grey (5YR 6/1) mottles; weakly developed coarse prismatic structure; very firm.

- 1.15. These soils are imperfectly draining (Soil Wetness Class III) and have a moderate to low capacity to absorb excess winter rainfall.

AGRICULTURAL LAND QUALITY

- 1.16. To assist in assessing land quality, the former Ministry of Agriculture, Fisheries and Food (MAFF) developed a method for classifying agricultural land by grade according to the extent to which physical or chemical characteristics impose long-term limitations on agricultural use for food production. The MAFF ALC system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced in the 1960s and revised in 1988.

1.17. The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the Climatological Data for Agricultural Land Classification². The relevant site data for an average elevation of 100m is given below:

- Average annual rainfall: 649 mm
- January-June accumulated temperature >0°C: 1362 day
- Field capacity period: 149 days
(when the soils are fully replete with water): late Nov–mid Apr
- Summer moisture deficits for wheat: 99 mm
Summer moisture deficits for potatoes: 89 mm

1.18. The survey described in the previous section was used in conjunction with the agro-climatic data above to classify the Main HNRFI Site using the revised guidelines for ALC issued in 1988 by the MAFF³. There are no climatic limitations at this locality.

Survey Results

1.19. The agricultural quality of the land is determined by wetness. Land of grade 3 has been identified.

Subgrade 3a

1.20. Subgrade 3a land occurs over a small area in the north-east of the Main HNRFI Site. Land within this grade is made up of land with a permeable upper subsoil and sandy clay loam topsoil. The lighter-textured topsoil, in combination with the imperfect subsoil drainage means land access is restricted over winter and early spring. This limits the flexibility of cultivation timings to autumn and spring sown crops.

Subgrade 3b

1.21. Subgrade 3b land makes up the majority of the Main HNRFI Site and all of the A47 Link Road. It is made up of land with a shallow slowly permeable subsoil and/or heavy topsoil. The combination of a high clay content topsoil and poorly draining subsoil will restrict access to land with farm machinery. This mainly limits the arable cropping of the land to autumn sowings of cereals and oil seeds.

1.22. A small area (<1 ha) of higher grade land was identified in the south of the Main HNRFI Site. However, the land could not be managed separately as the wetness of the surrounding land restricts access with farm machinery for cultivation and so it is therefore not mapped.

² Meteorological Office, (1989). Climatological Data for Agricultural Land Classification.

³ MAFF, (1988). Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land.

Non-agricultural Land

1.23. Non-agricultural land comprises Burbage Common Road, M69, B4668, B4669, the Leicester - Nuneaton Railway line and a number of home/farmsteads (Woodhouse Farm, The Willows Boarding Kennels, Hobb Hayes Farm, The Barn, Freeholt Lodge), ponds and farm tracks

Grade Areas

1.24. The boundary of the land grade is shown on Figure 11.19 (document reference 6.3.11.19) and the area occupied by each grade is shown in Table 1.1.

Table 1.1: Area Occupied by The Land Grade.

| Grade/Subgrade | Area | % of the Land |
|------------------|--------------|---------------|
| Subgrade 3a | 2.9 | 1 |
| Subgrade 3b | 204.2 | 83 |
| Non-agricultural | 40 | 16 |
| Total | 247.1 | 100 |

Soil Resources and Their Use

1.25. As part of the Government's 'Safeguarding our Soils' Strategy, the Department for Environment, Food and Rural Affairs (Defra) published a code of practice on the sustainable use of soils on construction sites, which can be helpful in design of developments and setting planning conditions. An Environment Agency Strategy Soil a Precious Resource: Our strategy for protecting, managing and restoring soil (Environment Agency, 2007) has complementary aims.

Topsoil

1.26. The predominantly heavy clay loam topsoils across the Main HNRFI Site and A47 Link Road are of moderate quality for re-use. Due to their relatively high clay content, the topsoils are difficult to handle with machinery and are highly susceptible to compaction damage when wet.

- 1.27. The sandy clay loam topsoils in the north-east of the Main HNRFI Site are a high-quality resource for re-use. They are well structured and easy to handle unless wet.
- 1.28. If the Main HNRFI Site and A47 Link Road were to be developed, soil handling would be best performed between late May and early October when the soils are likely to be drier.

Subsoil

- 1.29. The subsoils are susceptible to compaction during construction activities, which could result in restricted rooting depth, increased droughtiness and risk of localised flooding. If compacted during construction, subsoils should be loosened before any topsoil is spread on them.

Soil Handling

- 1.30. Areas not being built over (e.g. environmental buffers and landscape areas) should not be trafficked by construction vehicles as this will render the soils impermeable, preventing percolation of rainfall beyond the base of the topsoil, which will quickly become saturated.
- 1.31. Stripped topsoil should be stored in separate resource bunds no more than 3m high and kept grassed and free from construction traffic until required for re-use. The Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Defra, 2009) provides guidance on good practice in soil handling.

SUMMARY

- 1.32. The Main HNRFI Site and A47 Link Road is dominantly underlain by heavy clay loam topsoils that directly overlie slowly permeable clay subsoils. A small area in the north-east of the Main HNRFI Site has lighter permeable upper layers. The heavy soils provide land of subgrade 3b agricultural quality and the lighter soils provide subgrade 3a land. All the land is limited by wetness.
- 1.33. Were the Main HNRFI Site and A47 Link Road to be developed, the heavy clay loam topsoils would provide a moderate quality resource for re-use in landscaping with the lighter soils in the north-east of the Main HNRFI Site providing a high-quality resource.

Annex 1 ◆ Observation Points



HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

Date: 22-08-2022

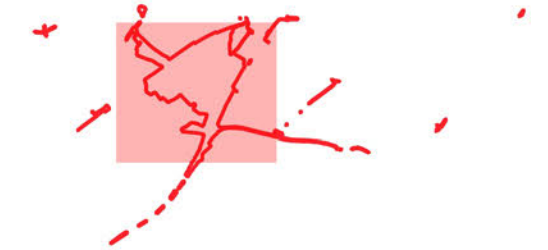
Paper size: A3

Scale: 1:10000

0 100 200 300 400 500 m

Key:

- DCO Order Limits
- Survey Observation
- Soil/Land Grade Description Pit



TRITAX SYMMETRY

A TRITAX BIG BOX COMPANY

Figure 11.18: Survey Observations

APFP Regulation: 5(2)(a)

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Drawing Number: edp3267_d043e

Drawing Status: FINAL

Revision: E

Drawn by: GYo

Approved by: BCo

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Annex 2 ◆ ALC and Soil Resources Survey

Land east of Hinckley (Symmetry Park): ALC and soil resources survey – Details of observations at each sampling point

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|--------------|---------------|-------------------|---------------|---------|----------|------------------|------------------|------------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 1 | 0-33 | HCL/C | <5 | 33-80+ | C | xxx | 80-90+ | Cr | xxxx | 1 | IV | 3b | W |
| 2 | 0-26 | HCL | <5 | 26-42 | HCL | xxx | 42-90+ | Cr | xxx | 0 | IV | 3b | W |
| 3 | 0-45 | C (disturbed) | <5 | 45-70+ | C | xxx | | | | 0 | IV | 3b | W |
| 4 | 0-30 | SCL | 5 | 30-45 | SCL | xxx | 45-60+ | C | xxx | 0 | III | 3b | W |
| 5 | 0-31 | HCL | 5 | 31-50 | SCL | xxx | 50-100+ | C | xxx | 0 | IV | 3b | W |
| 6 | 0-30 | HCL | 5 | 30-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 7 | 0-29 | HCL | 5-10 | 29-45 | C | xxx | 45+ | Stopped on stone | | 0 | IV | 3b | W |
| 8 | Not recorded | | | | | | | | | | | | |
| 9 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 10 | 0-30 | HCL | <5 | 30-100+ | C | xx | | | | 1 | IV | 3b | W |
| 11 | 0-29 | HCL | <5 | 29-80+ | C wet | xxx | | | | 1 | IV | 3b | W |
| 12 | 0-32 | HCL | <5 | 32-61 | C | xxx | 61-72 72-100+ | HCL C | xxx xxx | 0 | IV | 3b | W |
| 13 | 0-30 | SCL | 5 | 30-60 | SCL | xxx | 60-100+ | C | xxx | 0 | III | 3a | W |
| 14 | 0-30 | HCL | 5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 15 | 0-29 | HCL | <5 | 29-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 16 | 0-31 | HCL | <5 | 31-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 17 | 0-31 | HCL | <5 | 31-100+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 18 | 0-30 | HCL | <5 | 30-40+ | C | xxx | 40+ | Stopped on stone | | 1 | IV | 3b | W |
| 19 | 0-30 | HCL | 5 | 30-90+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 20 | 0-30 | MCL | 5 | 30-80+ | C | xxx | | | | 1 | IV | 3a | W |
| 21 | 0-31 | SCL | <5 | 31-58 | SCL | xxx | 58-80+ | C | xxx | 0 | III | 3a | W |
| 22 | Not recorded | | | | | | | | | | | | |
| 23 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 24 | 0-30 | HCL | <5 | 30-41 | HCL | xxx | 41-100+ | C | xxx | 0 | III/IV | 3b | W |
| 25 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 26 | 0-30 | HCL | <5 | 30-40 | Cr | xxx | 40-60 60-80+ | SCL Cr | xxx xxx | 1 | IV | 3b | W |
| 27 | 0-27 | HCL | <5 | 27-55 | HCL | xxx | 55-90+ | Cr | xxx | 1 | IV/III | 3b | W |
| 28 | 0-28 | HCL | <5 | 28-90+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 29 | 0-30 | HCL | 5 | 30-90+ | C | xxx | | | | 0 | IV | 3b | W |
| 30 | 0-29 | HCL | 5 | 29-90+ | C | xxx | | | | 1 | IV | 3b | W |
| 31 | 0-31 | HCL | <5 | 31-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 32 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 33 | 0-31 | HCL | <5 | 31-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 34 | 0-29 | HCL | <5 | 29-60+ | C | xxx | | | | 0 | IV | 3b | W |
| 35 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 36 | 0-20 | MCL | <5 | 20-27 | HCL | xxx | 27-80+ | Cr | xxx | 2 | IV | 3b | W |
| 37 | 0-23 | MCL | <5 | 23-31 | MCL | xx | 31-42 42-90+ | HCL Cr | xxx xxx | 0 | IV | 3b | W |

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|------------------------------------|-------------------|-------------------|---------------|---------------|----------|-----------------|------------------|------------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 38 | 0-20 | MCL | <5 | 20-30 | MCL | xxx | 30-46 46-80+ | HCL Cr | xxx xxx | 0 | IV | 3b | W |
| 39 | 0-29 | HCL | 5 | 29-60+ | C mod st | xxx | | | | 1 | IV | 3b | W |
| 40 | 0-31 | HCL | <5 | 31-60 | SCL/SC | xxx | | | | 0 | IV | 3b | W |
| 41 | Non agricultural - road | | | | | | | | | | | | |
| 42 | 0-31 | HCL | 5 | 31-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 43 | 0-30 | HCL | 5 | 30-40 | C | xxx | 40+ | Stopped on stone | | 0 | IV | 3b | W |
| 44 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 45 | 0-30 | HCL/C | <5 | 30-40+ | C wet | xxx | | | | 0 | IV | 3b | W |
| 46 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 1 | IV | 3b | W |
| 47 | 0-30 | HCL | <5 | 30-60+ | C | xxx | | | | 0 | IV | 3b | W |
| 48 | 0-28 | HCL | <5 | 28-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 49 | Non agricultural - garden | | | | | | | | | | | | |
| 50 | 0-23 | MCL | <5 | 23-33 | MCL | xx | 33-64 64-90+ | HCL Cr | xxx xxx | 0 | IV | 3b | W |
| 51 | 0-50+ | M/HCL (disturbed) | | | | | | | | 0 | | | |
| 52 | 0-22 | MCL | <5 | 22-28 | MCL | xxx | 28-64 64-90+ | HCL Cr | xxx xxx | 0 | IV | 3b | W |
| 53 | 0-22 | HCL | <5 | 22-29 | HCL | xxx | 29-80+ | Cr | xxx | 1 | III/IV | 3b | W |
| 54 | 0-30 | HCL | <5 | 30-56 | HCL | xx | 56+ | Stopped on stone | | 0 | III | 3b | W |
| 55 | 0-31 | HCL | <5 | 31-70 | C | xxx | 70-90+ | Cr | xxx | 0 | IV | 3b | W |
| 56 | 0-30 | HCL | <5 | 30-51 | SCL | xxx | 51-80+ | C | xxx | 1 | III | 3b | W |
| 57 | 0-29 | HCL | <5 | 29-50+ | SC/C | xxx | 50+ | Stopped on stone | | 1 | IV | 3b | W |
| 58 | 0-30 | HCL | 5 | 30-60+ | C | xxx | | | | 1 | IV | 3b | W |
| 59 | Non agricultural – rail embankment | | | | | | | | | | | | |
| 60 | 0-30 | C | 5 | 30-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 61 | 0-31 | HCL | 5 | 31-52 | C | xxx | 52-100+ | Cr | xxx | 0 | IV | 3b | W |
| 62 | 0-29 | HCL | <5 | 29-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 63 | 0-31 | HCL | <5 | 31-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 64 | 0-28 | HCL | 5 | 28-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 65 | 0-32 | HCL | <5 | 32-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 66 | 0-31 | HCL | <5 | 31-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 67 | 0-18 | HCL | <5 | 18-36 | HCL | xxx | 36-51 51-90+ | HCL Cr | xxx xxx | 0 | III | 3b | W |
| 68 | 0-26 | HCL | <5 | 26-46 | HCL | xxx | 46-90+ | Cr | xxx | 0 | III | 3b | W |
| 69 | 0-20 | HCL/C | <5 | 20-40+ | C | xxx | | | | 0 | IV | 3b | W |
| 70 | 0-30 | HCL | <5 | 30-100+ | C (sand inc.) | xxx | | | | 1 | IV | 3b | W |
| 71 | 0-32 | HCL | <5 | 32-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 72 | 0-29 | HCL | <5 | 29-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 73 | 0-30 | HCL | <5 | 30-51 | C | xxx | 51+ | Stopped on stone | | 1 | IV | 3b | W |

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|------------|---------|-------------------|----------------|----------|------------|------------------|-------------------------|------------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 74 | 0-31 | HCL | <5 | 31-60 | C | xxx | 60-80 80+ | SCL Stopped on stone | xxx | 0 | IV | 3b | W |
| 75 | 0-30 | HCL | <5 | 31-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 76 | 0-30 | HCL | 5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 77 | 0-30 | HCL | 5 | 30-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 78 | 0-29 | HCL | <5 | 29-48 | HCL | xxx | 48-80+ | C | xxx | 1 | III | 3b | W |
| 79 | 0-30 | HCL | 5 | 30-49 | HCL | xxx | 49-100+ | C | xxx | 0 | III | 3b | W |
| 80 | 0-27 | HCL | <5 | 27-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 81 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 82 | 0-30 | C | <5 | 30-80+ | C | xxx | | | | 0 | III | 3b | W |
| 83 | 0-30 | HCL | <5 | 30-41 | HCL | xxx | 41-80+ | C | xxx | 0 | III/IV | 3b | W |
| 84 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 85 | 0-33 | H/MCL | <5 | 33-50 50-62 | SCL C | xxx xxx | 62-80 80-100+ | SCL C | xxx xxx | 1 | III | 3a/b | W |
| 86 | 0-31 | HCL | <5 | 31-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 87 | 0-30 | HCL | <5 | 30-100+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 88 | 0-31 | HCL | <5 | 31-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 89 | 0-32 | HCL | 5 | 32-51 | HCL | xxx | 51-100+ | C | xxx | 2 | III | 3b | W |
| 90 | 0-30 | HCL | <5 | 30-100+ | Cr | | | | | 0 | IV | 3b | W |
| 91 | 0-28 | HCL | <5 | 28-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 92 | 0-32 | HCL | 5 | 32-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 93 | 0-30 | HCL | 5 | 30-90+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 94 | 0-30 | HCL | <5 | 30-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 95 | 0-29 | HCL | <5 | 29-51 | Cr | xxx | 51-60 60-100+ | SCL Cr | xxx xxx | 2 | IV | 3b | W |
| 96 | 0-30 | HCL | <5 | 30-90+ | C | xxx | | | | 1 | IV | 3b | W |
| 97 | 0-28 | HCL | <5 | 28-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 98 | 0-31 | HCL | 5 | 31-90+ | C | xxx | | | | 0 | IV | 3b | W |
| 99 | 0-30 | HCL | 5 | 30-40 | C | xxx | 40+ | Stopped on stone | | 0 | IV | 3b | W |
| 100 | Muck heap | | | | | | | | | | | | |
| 101 | 0-31 | <5 | 5 | 31-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 102 | 0-30 | HCL | <5 | 30-48 | HCL | xxx | 45-100+ | C | xxx | 1 | III | 3b | W |
| 103 | 0-20 | M/HCL | <5 | 20-40 | HCL | xxx | 40-80+ | Cr | xxx | 1 | III | 3b | W |
| 104 | 0-20 | HCL | <5 | 20-35 | HCL | xxx | 35-100+ | Cr | xxx | 1 | IV | 3b | W |
| 105 | 0-10 | HCL | <5 | 10-40 | C | xxx | 40-100+ | Cr | xxx | 1 | IV | 3b | W |
| 106 | 0-28 | C | <5 | 28-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 107 | 0-28 | HCL | <5 | 28-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 108 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 2 | IV | 3b | W |
| 109 | 0-31 | HCL | <5 | 31-100+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 110 | 0-31 | HCL | 5 | 31-80+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 111 | 0-30 | HCL | <5 | 30-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 112 | 0-29 | HCL | <5 | 29-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 113 | 0-30 | SCL | 5 | 30-100+ | Cr | xxx | | | | 2 | IV | 3b | W |
| 114 | 0-32 | SCL | 5 | 32-100+ | Cr | xxx | | | | 0 | IV | 3b | W |

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|--------------------------|---------|-------------------|---------------|---------|----------|------------------|------------------|------------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 115 | 0-30 | HCL | <5 | 30-40 | Cr | xxx | 40-45 45-100+ | SCL Cr | xxx x | 0 | IV | 3b | W |
| 116 | 0-29 | HCL | 5 | 30-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 117 | 0-30 | HCL | <5 | 30-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 118 | 0-29 | HCL | 5 | 29-80+ | C sl st | xxx | | | | 0 | IV | 3b | W |
| 119 | 0-31 | HCL | <5 | 31-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 120 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 121 | 0-20 | C | 5 | 20-80+ | C wet | xxx | | | | 2 | IV | 3b | W |
| 122 | 0-30 | HCL | <5 | 30-50 | HCL | xxx | 50-80+ | C | xxx | 0 | III | 3b | W |
| 123 | 0-20+ | C wet | <5 | 20-80+ | C wet | xxx | | | | 0 | IV | 3b | W |
| 124 | 0-12 | HCL | <5 | 12-30+ | C | xxx | 30+ | Stopped on stone | | 4 | IV | 3b | W |
| 125 | 0-31 | HCL/C | <5 | 31-65+ | C | xxx | 65+ | Stopped on stone | | 2 | IV | 3b | W |
| 126 | 0-30 | HCL | 5 | 30-80+ | Cr | xxx | | | | 3 | IV | 3b | W |
| 127 | 0-20 | HCL | 5 | 20-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 128 | 0-30 | HCL | 5 | 30-45 | C | xxx | 45+ | Stopped on stone | | 0 | IV | 3b | W |
| 129 | 0-31 | HCL | 5 | 31-100 | Cr | xxx | | | | 0 | IV | 3b | W |
| 130 | 0-29 | HCL | 5 | 29-80+ | HHCL/C | xxx | | | | 1 | IV | 3b | W |
| 131 | 0-30 | SCL | 5 | 32-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 132 | 0-29 | HCL | <5 | 29-90+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 133 | 0-30 | HCL | 5 | 30-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 134 | 0-30 | SCL | <5 | 30-61 | SCL | xxx | 61-100+ | LMS | xxx | 0 | I | 2 | W/D |
| 135 | 0-32 | SCL | <5 | 32-100+ | SCL | xxx | | | | 0 | II | 1 | |
| 136 | 0-20 | HCL/C | <5 | 20-90+ | C | xxx | | | | 1 | IV | 3b | W |
| 137 | 0-30 | C | <5 | 30-80+ | Cr | xxx | | | | 2 | IV | 3b | W |
| 138 | 0-29 | HCL | <5 | 29-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 139 | 0-30 | HCL | <5 | 30-50 | SCL | xxx | 50-100+ | Cr | xx | 0 | IV | 3b | W |
| 140 | 0-31 | HCL | <5 | 31-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 141 | Non agricultural - track | | | | | | | | | | | | |
| 142 | 0-31 | HCL | <5 | 31-100+ | C | xxx | | | | 2 | IV | 3b | W |
| 143 | 0-28 | HCL | 5 | 28-100+ | C | xxx | | | | 3 | IV | 3b | W |
| 144 | 0-30 | HCL | 5 | 30-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 145 | 0-28 | HCL | 5 | 28-80+ | C | xxx | | | | 1 | IV | 3b | W |
| 146 | 0-28 | HCL | 5 | 28-80+ | Cr wet | xxx | | | | 1 | IV | 3b | W |
| 147 | 0-30 | HCL | <5 | 30-100 | Cr | xxx | | | | 0 | IV | 3b | W |
| 148 | Non agricultural - pond | | | | | | | | | | | | |
| 149 | 0-32 | HCL | <5 | 32-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 150 | 0-30 | HCL | 5 | 30-50 | Cr | xxx | 50-65 65-100+ | SCL Cr | xxx xxx | 0 | IV | 3b | W |
| 151 | 0-28 | HCL | <5 | 28-100+ | C | xxx | | | | 1 | IV | 3b | W |
| 152 | 0-30 | C/HCL | 5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 153 | 0-20 | HCL/C | <5 | 20-50+ | C | xxx | 50+ | Stopped on stone | | 1 | IV | 3b | W |
| 154 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|-------------------------|---------|-------------------|----------------|--------------------------------|------------|------------------|----------------------------|------------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 155 | 0-28 | MCL | <5 | 28-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 156 | 0-31 | HCL | <5 | 31-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 157 | 0-30 | HCL | <5 | 30-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 158 | 0-29 | HCL | 5-10 | 29-100+ | C | xxx | | | | 2 | IV | 3b | W |
| 159 | 0-30 | SCL | 5 | 30-46 46-65 | SCL MSL | xxx xxx | 65-100+ | SCL | xxx | 0 | | | |
| 160 | 0-30 | SCL | 5 | 30-45 | SCLr | xxx | 41-60 60-100+ | Cr SCL | xxx xx | 0 | III | 3a | W |
| 161 | 0-31 | HCL | 5 | 31-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 162 | 0-28 | SCL | 5 | 28-40 | Cr | xxx | 40-50 50-100+ | SCL Cr | xxx xxx | 2 | IV | 3b | W |
| 163 | 0-15 | C | <5 | 15-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 164 | 0-22 | HCL | <5 | 22-48 | HCL | xxx | 48-60 60+ | C/HHCL Stopped on stone | xxx | 0 | III | 3b | W |
| 165 | 0-27 | HCL | 5 | 27-80+ | C | xxx | | | | 0 | IV | 3b | W |
| 166 | 0-31 | SCL | <5 | 31-50 | Cr | xxx | 50+ | Stopped on stone | | 3 | IV | 3b | W |
| 167 | 0-31 | HCL | <5 | 31-65 | S/HCL | xxx | 65-100+ | Cr | xxx | 1 | III | 3b | W |
| 168 | 0-25 | HCL/C | <5 | 25-100+ | C | xxx | | | | 1 | IV | 3b | W |
| 169 | 0-30 | HCL | 30-80+ | C | xxx | | | | | 1 | IV | 3b | W |
| 170 | 0-26 | MCL | <5 | 26-57 | HCL | xxx | 57-100+ | Cr | xxx | 1 | III | 3b | W |
| 171 | 0-30 | HCL | <5 | 30-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 172 | 0-26 | MCL | <5 | 26-42 | SCL | xxx | 42-50 50+ | C Stopped on stone | xxx | 1 | III | 3a | W |
| 173 | 0-34 | HCL | <5 | 34-80+ | Cr | xxx | | | | 1 | IV | 3b | W |
| 174 | 0-24 | HCL | <5 | 24-80+ | Cr | xxx | | | | 2 | IV | 3b | W |
| 175 | 0-21 | HCL | <5 | 21-90+ | Cr | xxx | | | | 2 | IV | 3b | W |
| 176 | 0-15 | HCL/MCL | 5 | 25-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 177 | 0-30 | HCL | <5 | 30-60 | HCL | xxx | 60-100+ | C | xxx | 2 | III/IV | 3b | W |
| 178 | 0-27 | MCL | <5 | 27-45 | SCL | xx | 45-80+ | C | xxx | 2 | III | 3b | W |
| 180 | 0-30 | MCL | <5 | 30-50 | SCL | xxx | 50-80+ | C w/ sandy incl | xxx | 3 | III | 3b | W |
| 181 | Non agricultural - yard | | | | | | | | | | | | |
| 182 | 0-31 | HCL | <5 | 31-80+ | Cr | xxx | | | | 2 | IV | 3b | W |
| 183 | 0-25 | MCL | <5 | 25+ | Disturbed – historic landfill? | | | | | 1 | | | |
| 184 | 0-15 | MCL | <5 | 15-35 | HCL (dist) | xxx | 35+ | Stopped on stone | | 1 | | | |
| 185 | 0-16 | MCL | <5 | 16-41 | SCL | xxx | 41-100+ | Cr | xxx | 0 | III | 3b | W |
| 186 | 0-29 | HCL | <5 | 29-56 | SCL | xxx | 56-90+ | C | xxx | 0 | III | 3b | W |
| 187 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 188 | 0-31 | HCL/C | <5 | 31-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 189 | 0-30 | HCL | <5 | 30-100+ | C | xxx | | | | 0 | IV | 3b | W |
| 190 | 0-20 | HCL | <5 | 20-50+ | C | xxx | | | | 2 | IV | 3b | W |

| Obs No | Topsoil | | | Upper subsoil | | | Lower subsoil | | | Slope (°) | Wetness Class | Agricultural quality | |
|--------|---|---------|-------------------|----------------|---------|----------|----------------|------------------|----------|-----------|---------------|----------------------|-----------------|
| | Depth (cm) | Texture | Stones >20 mm (%) | Depth (cm) | Texture | Mottling | Depth (cm) | Texture | Mottling | | | Grade | Main limitation |
| 191 | 0-31 | HCL | <5 | 31-60 | C | xxx | 60-100+ | C grey | xxx | 0 | IV | 3b | W |
| 192 | 0-25 | H/MCL | <5 | 25-65+ | C | xxx | | | | 0 | IV | 3b | W |
| 193 | Disturbed mix of topsoil and reddish clay under pylon | | | | | | | | | | | | |
| 194 | 0-31 | HCL | <5 | 31-100+ | Cr | xxx | | | | 0 | IV | 3b | W |
| 195 | 0-30 | HCL | <5 | 30-41 | HCL | xxx | <u>41-100+</u> | C | xxx | 0 | III | 3b | W |
| 196 | 0-28 | HCL | <5 | 28-32 | HCL | xxx | <u>32-100+</u> | Cr | xxx | 0 | IV | 3b | W |
| 197 | 0-29 | HCL | <5 | 29-39 | HCL | xxx | <u>39-100+</u> | C | xxx | 0 | IV | 3b | W |
| 198 | 0-29 | HCL | <5 | <u>29-100+</u> | C | xxx | | | | 0 | IV | 3b | W |
| 199 | 0-30 | HCL | <5 | 30-43 | HCL | xxx | <u>43-100+</u> | Cr | xxx | 0 | III | 3b | W |
| 200 | 0-29 | HCL | <5 | 29-52 | HCL | xxx | <u>52-100+</u> | C | xxx | 0 | III | 3b | W |
| 201 | 0-32 | HCL | <5 | <u>32-100+</u> | C | xxx | | | | 2 | IV | 3b | W |
| 202 | 0-28 | HCL | <5 | 28-90+ | C dist | xxx | | | | 0 | IV | 3b | W |
| 203 | 0-31 | HCL | <5 | <u>31-40</u> | C | xxx | 40+ | Stopped on stone | | 0 | IV | 3b | W |
| 204 | 0-26 | HCL | <5 | 26-80+ | C | xxx | | | | 2 | IV | 3b | W |
| 205 | 0-30 | HCL | <5 | 30-40 | HCL | xxx | <u>40-90+</u> | C | xxx | 2 | III | 3b | W |
| 206 | 0-28 | C/HCL | <5 | 28-90+ | C | xxx | | | | 0 | IV | 3b | W |
| 207 | 0-30 | HCL | <5 | 30-41 | HCL | xxx | <u>41-100+</u> | C | xxx | 1 | IV | 3b | W |

Key to table

Mottle intensity:

- o unmottled
- x few to common rusty root mottles (topsoils) or a few ochreous mottles (subsoils)
- xx common to many ochreous mottles and/or dull structure faces
- xxx common to many greyish or pale mottles (gleyed horizon)
- xxxx dominantly grey, often with some ochreous mottles (gleyed horizon)

Texture:

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

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

Limitations:

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

Texture suffixes & prefixes:

- ca - calcareous: x-extremely, v-very, sl-slightly
- (ca) marginally calcareous
- mn - ferrimanganiferous concentrations
- gn - greenish, yb - yellowish brown, rb - reddish brown
- r - reddish; (v)st - (very) stony; sdst - sandstone; lst - limestone
- dist - disturbed soil layer; mdst - mudstone