

High Speed Rail (Crewe to Manchester)

Background information and data

Agriculture, forestry and soils

BID AG-002-0MA03

MA03: Pickmere to Agden and Hulseheath
Agriculture, forestry and soils baseline data

High Speed Rail (Crewe to Manchester)

Background information and data

Agriculture, forestry and soils

BID AG-002-0MA03

MA03: Pickmere to Agden and Hulseheath

Agriculture, forestry and soils baseline data



Department
for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.hs2.org.uk

A report prepared for High Speed Two (HS2) Limited:

ARUP+ ERM | FOSTER + PARTNERS | JACOBS
RAMBOLL | TYPESA | COSTAIN

MWJV

Mott MacDonald | WSP

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard, please contact High Speed Two (HS2) Limited.

© High Speed Two (HS2) Limited, 2022, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v3.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3 **OGL** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



Printed in Great Britain on paper containing 100% recycled fibre.

Contents

1	Introduction	2
1.2	Soil data	2
2	References	10
Tables		
	Table 1: Baseline borehole survey records	3

1 Introduction

- 1.1.1 This report presents agriculture, forestry and soils baseline data for the Pickmere to Agden and Hulseheath area (MA03).
- 1.1.2 The following content comprises the individual soil data logs for the soil profiles observed as part of the survey undertaken of those parts of the study area for which published Agricultural Land Classification information was unavailable as referenced in the Environmental Statement (see Volume 5: Appendix AG-001-0MA03)¹.

1.2 Soil data

- 1.2.1 The observed soil profile data are shown below in Table 1 on baseline borehole survey sheets. The location of each survey point is identified by a grid reference.

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, MA03 Pickmere to Agden and Hulseheath, Agriculture, forestry and soils assessment*. Volume 5: Appendix AG-001-0MA03. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

Background Information and Data

BID-AG-002-0MA03
 Agriculture, forestry and soils
 MA03: Pickmere to Agden and Hulseheath
 Agriculture, forestry and soils baseline data

Company	Date of soil survey	Land parcel reference	CFA farm ID	Unique borehole ID		Borehole ID (Auto generated on save)	Survey site name	Borehole location			Soil					Structure ped		Soil nutrients								Wetness class	Limiting factor (1)	Limiting factor (2)	Limiting factor (3)	ALC grade	Soil survey category						
				Soil type (T, U, L)	Borehole no			Easting (X) coordinate	Northing (Y) coordinate	Lower depth of horizon (cm)	Texture	Colour (Munsell soil colour chart)	Consistency	Subsoil structure	Calcareous	Average annual rainfall	Soil handling class	Size	Shape	OM %	pH value	P mg/l	K mg/l	Mg mg/l	total N mg/l							Gley	Stone content % total	Stone content %>2cm	Stone content %>6cm	Stone lithology	Slowly permeable layer
RAC	02/11/2018	L5250	MA03	L1	3159	L5250_U_3159	MA03 L5250	371900	383900	60	LmS - Loamy sand (Medium)	10YR3/2	Friable	Poor	No	700-1000mm	High resilience	Fine	Granular							Yes	1	0	0	Hard	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3

Background Information and Data

BID AG-002-0MA03
 Agriculture, forestry and soils
 MA03: Pickmere to Agden and Hulseheath
 Agriculture, forestry and soils baseline data

Company	Date of soil survey	Land parcel reference	CFA farm ID	Unique borehole ID		Borehole ID (Auto generated on save)	Survey site name	Borehole location			Soil							Structure ped		Soil nutrients							Soil survey category											
				Soil type (T, U, L)	Borehole no			Easting (X) coordinate	Northing (Y) coordinate	Lower depth of horizon (cm)	Texture	Colour (Munsell soil colour chart)	Consistency	Subsoil structure	Calcareous	Average annual rainfall	Soil handling class	Size	Shape	OM %	pH value	P mg/l	K mg/l	Mg mg/l	total N mg/l	Gley		Stone content % total	Stone content %>2cm	Stone content %>6cm	Stone lithology	Slowly permeable layer	Wetness class	Limiting factor (1)	Limiting factor (2)	Limiting factor (3)	ALC grade	
RAC	05/06/2018	L6291	MA03	L2	3075	MA03_L2_3075	MA03 L6291	370950	380650	120	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky								Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3
RAC	05/06/2018	L6291	MA03	T	3076	MA03_T_3076	MA03 L6291	371100	380700	28	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3076	MA03_U_3076	MA03 L6291	371100	380700	39	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3076	MA03_L1_3076	MA03 L6291	371100	380700	60	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3076	MA03_L2_3076	MA03 L6291	371100	380700	120	C - Clay	5YR5/3	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3077	MA03_T_3077	MA03 L6291	371100	380800	28	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3077	MA03_U_3077	MA03 L6291	371100	380800	38	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3077	MA03_L1_3077	MA03 L6291	371100	380800	60	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3077	MA03_L2_3077	MA03 L6291	371100	380800	120	C - Clay	5YR5/3	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3078	MA03_T_3078	MA03 L6291	371100	380900	25	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3078	MA03_U_3078	MA03 L6291	371100	380900	38	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3078	MA03_L1_3078	MA03 L6291	371100	380900	60	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3078	MA03_L2_3078	MA03 L6291	371100	380900	120	C - Clay	5YR5/3	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3079	MA03_T_3079	MA03 L6291	371100	381000	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3079	MA03_U_3079	MA03 L6291	371100	381000	40	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3079	MA03_L1_3079	MA03 L6291	371100	381000	60	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3079	MA03_L2_3079	MA03 L6291	371100	381000	120	C - Clay	5YR5/3	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3080	MA03_T_3080	MA03 L6291	371200	381000	31	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3080	MA03_U_3080	MA03 L6291	371200	381000	55	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3080	MA03_L1_3080	MA03 L6291	371200	381000	65	mSL - Sandy loam (Medium)	7.5YR6/3	Friable	Poor	No	700-1000mm	High resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3080	MA03_L2_3080	MA03 L6291	371200	381000	120	C - Clay	7.5YR5/6	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3081	MA03_T_3081	MA03 L6291	371100	381100	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky							Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3081	MA03_U_3081	MA03 L6291	371100	381100	120	C - Clay	10YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3082	MA03_T_3082	MA03 L6291	371200	381100	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3082	MA03_U_3082	MA03 L6291	371200	381100	50	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3082	MA03_L1_3082	MA03 L6291	371200	381100	65	mSL - Sandy loam (Medium)	7.5YR6/3	Friable	Poor	No	700-1000mm	High resilience	Coarse	Subangular Blocky							Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3082	MA03_L2_3082	MA03 L6291	371200	381100	120	C - Clay	7.5YR5/6	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3083	MA03_T_3083	MA03 L6291	371200	381200	30	SCL - Sandy clay loam	7.5YR4/3	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3083	MA03_U_3083	MA03 L6291	371200	381200	38	SCL - Sandy clay loam	7.5YR4/3	Firm	Moderate	No	700-1000mm	Low resilience	Coarse	Angular Blocky							No	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3083	MA03_L1_3083	MA03 L6291	371200	381200	120	C - Clay	5YR4/3	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Subangular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3084	MA03_T_3084	MA03 L6291	371200	381300	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3084	MA03_U_3084	MA03 L6291	371200	381300	42	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3084	MA03_L1_3084	MA03 L6291	371200	381300	60	C - Clay	5YR4/2	Very firm	Poor	No	700-1000mm	Low resilience	Coarse	Subangular Blocky							Yes	0	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3084	MA03_L2_3084	MA03 L6291	371200	381300	120	C - Clay	5YR5/3	Very firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3085	MA03_T_3085	MA03 L6291	371150	381400	27	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3085	MA03_U_3085	MA03 L6291	371150																														

Background Information and Data

BID AG-002-0MA03
Agriculture, forestry and soils
MA03: Pickmere to Agden and Hulseheath
Agriculture, forestry and soils baseline data

Company	Date of soil survey	Land parcel reference	CFA farm ID	Unique borehole ID		Borehole ID (Auto generated on save)	Survey site name	Borehole location			Soil							Structure ped			Soil nutrients										Soil survey category						
				Soil type (T, U, L)	Borehole no			Easting (X) coordinate	Northing (Y) coordinate	Lower depth of horizon (cm)	Texture	Colour (Munsell soil colour chart)	Consistency	Subsoil structure	Calcareous	Average annual rainfall	Soil handling class	Size	Shape	OM %	pH value	P mg/l	K mg/l	Mg mg/l	total N mg/l	Gley	Stone content % total	Stone content %>2cm	Stone content %>6cm	Stone lithology		Slowly permeable layer	Wetness class	Limiting factor (1)	Limiting factor (2)	Limiting factor (3)	ALC grade
RAC	05/06/2018	L6291	MA03	L1	3094	MA03_L1_3094	MA03 L6291	371300	382000	80	C - Clay	10YR4/1	Firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	0	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3
RAC	05/06/2018	L6291	MA03	L2	3094	MA03_L2_3094	MA03 L6291	371300	382000	120	ZL - Silt loam	10YR2/1	Friable	Poor	No	700-1000mm	Low resilience	Fine	Granular						No	0	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3095	MA03_T_3095	MA03 L6291	371400	382000	30	SCL - Sandy clay loam	10YR3/3	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky	3.2	6.2	9.4	63	75	No	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3095	MA03_U_3095	MA03 L6291	371400	382000	40	HCL - Clay loam (heavy)	10YR4/2	Very friable	Moderate	No	700-1000mm	Low resilience	Coarse	Angular Blocky	1.8	6.7	6.2	48	143	Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3095	MA03_L1_3095	MA03 L6291	371400	382000	80	C - Clay	5YR5/2	Firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3095	MA03_L2_3095	MA03 L6291	371400	382000	120	C - Clay	5YR4/3	Firm	Poor	No	700-1000mm	Low resilience	Very coarse	Angular Blocky						Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3096	MA03_T_3096	MA03 L6291	371600	382000	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3096	MA03_U_3096	MA03 L6291	371600	382000	53	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3096	MA03_L1_3096	MA03 L6291	371600	382000	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3097	MA03_T_3097	MA03 L6291	371700	382000	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3097	MA03_U_3097	MA03 L6291	371700	382000	50	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3097	MA03_L1_3097	MA03 L6291	371700	382000	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3098	MA03_T_3098	MA03 L6291	371300	382100	28	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3098	MA03_U_3098	MA03 L6291	371300	382100	53	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3098	MA03_L1_3098	MA03 L6291	371300	382100	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3099	MA03_T_3099	MA03 L6291	371400	382100	28	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3099	MA03_U_3099	MA03 L6291	371400	382100	50	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3099	MA03_L1_3099	MA03 L6291	371400	382100	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3100	MA03_T_3100	MA03 L6291	371500	382100	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3100	MA03_U_3100	MA03 L6291	371500	382100	53	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3100	MA03_L1_3100	MA03 L6291	371500	382100	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3101	MA03_T_3101	MA03 L6291	371589	382103	32	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky	4.7	5.1	17.6	139	42	Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3101	MA03_U_3101	MA03 L6291	371589	382103	55	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky	3.4	5.8	11.6	62	40	Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3101	MA03_L1_3101	MA03 L6291	371589	382103	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3102	MA03_T_3102	MA03 L6291	371700	382100	32	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3102	MA03_U_3102	MA03 L6291	371700	382100	55	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky						Yes	0	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3102	MA03_L1_3102	MA03 L6291	371700	382100	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3103	MA03_T_3103	MA03 L6291	371394	382201	30	SCL - Sandy clay loam	10YR4/2	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Angular Blocky	2.7	5.3	16.6	83	55	Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3103	MA03_U_3103	MA03 L6291	371394	382201	55	SCL - Sandy clay loam	10YR4/2	Firm	Moderate	No	700-1000mm	Medium resilience	Coarse	Angular Blocky	2	6.3	11.6	84	66	Yes	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3103	MA03_L1_3103	MA03 L6291	371394	382201	120	mSL - Sandy loam (Medium)	7.5YR6/3	Very friable	Poor	No	700-1000mm	High resilience	Fine	Granular						Yes	0	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3104	MA03_T_3104	MA03 L6291	371500	382200	30	MSZL - Medium sandy silt loam	10YR3/3	Very friable	N/A	No	700-1000mm	High resilience	Coarse	Angular Blocky						No	2	2	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3104	MA03_U_3104	MA03 L6291	371500	382200	70	MCL - Clay loam (medium)	10YR4/2	Firm	Moderate	No	700-1000mm	Low resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L1	3104	MA03_L1_3104	MA03 L6291	371500	382200	120	C - Clay	5YR4/3	Firm	Poor	No	700-1000mm	Low resilience	Coarse	Angular Blocky						Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	L2	3104	MA03_L2_3104	MA03 L6291	371500	382200	120	C - Clay	5YR4/3	Firm	Moderate	No	700-1000mm	Low resilience	Very coarse	Angular Blocky						Yes	1	0	0	Hard	Yes	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	T	3105	MA03_T_3105	MA03 L6291	371600	382200	30	SCL - Sandy clay loam	10YR3/3	Firm	N/A	No	700-1000mm	Medium resilience	Coarse	Subangular Blocky						No	1	0	0	Hard	No	Class IV	Wetness	N/A	N/A	3b	Survey type 3	
RAC	05/06/2018	L6291	MA03	U	3105	MA03_U_3105	MA03 L6291	371600	382200	80	SCL - Sandy clay loam	10YR3																									

Company	Date of soil survey	Land parcel reference	CFA farm ID	Unique borehole ID		Borehole ID (Auto generated on save)	Survey site name	Borehole location		Lower depth of horizon (cm)	Soil						Structure ped		Soil nutrients								Soil survey category										
				Soil type (T, U, L)	Borehole no			Easting (X) coordinate	Northing (Y) coordinate		Texture	Colour (Munsell soil colour chart)	Consistency	Subsoil structure	Calcareous	Average annual rainfall	Soil handling class	Size	Shape	OM %	pH value	P mg/l	K mg/l	Mg mg/l	total N mg/l	Gley		Stone content % total	Stone content %>2cm	Stone content %>6cm	Stone lithology	Slowly permeable layer	Wetness class	Limiting factor (1)	Limiting factor (2)	Limiting factor (3)	ALC grade
RAC	18/09/2019	L5946	MA03	L1	3187	L5946_L1_3187	MA03 L5946	371700	385100	120	mS - Sand (Medium)	5YR4/6	Very friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							No	0	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	T	3188	L5946_T_3188	MA03 L5946	371700	385200	38	mSL - Sandy loam (Medium)	10YR4/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular							No	4	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	U	3188	L5946_U_3188	MA03 L5946	371700	385200	70	Lms - Loamy sand (Medium)	5YR4/6	Friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							Yes	4	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	L1	3188	L5946_L1_3188	MA03 L5946	371700	385200	120	mS - Sand (Medium)	5YR5/3	Very friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							Yes	1	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	T	3189	L5946_T_3189	MA03 L5946	371600	385200	38	mSL - Sandy loam (Medium)	7.5YR4/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular	2.6	6.3	21	77.3	32.2		No	4	2	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	L1	3189	L5946_U_3189	MA03 L5946	371600	385200	70	Lms - Loamy sand (Medium)	5YR5/6	Friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular	1	6.5	8.2	74.9	14.1		Yes	4	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5946	MA03	L1	3189	L5946_L1_3189	MA03 L5946	371600	385200	120	mS - Sand (Medium)	5YR6/3	Very friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							Yes	1	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3190	L5959_T_3190	MA03 L5959	371500	385300	32	mSL - Sandy loam (Medium)	7.5YR4/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular							No	2	0	0	Hard	No	Class I	Droughtiness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3190	L5959_U_3190	MA03 L5959	371500	385300	53	mSL - Sandy loam (Medium)	7.5YR4/3	Friable	Poor	Yes	700-1000mm	High resilience	Fine	Granular							Yes	2	0	0	Hard	Yes	Class I	Droughtiness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3190	L5959_L1_3190	MA03 L5959	371500	385300	120	mS - Sand (Medium)	10YR5/2	Very friable	Poor	Yes	700-1000mm	High resilience	Fine	Granular							Yes	2	0	0	Hard	Yes	Class I	Droughtiness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3192	L5959_T_3192	MA03 L5959	371550	385350	32	mSL - Sandy loam (Medium)	7.5YR4/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular	5.6	6.3	33.2	79.8	69.8		No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3192	L5959_U_3192	MA03 L5959	371550	385350	44	mSL - Sandy loam (Medium)	7.5YR5/2	Friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular	1.8	5.7	13.8	57.6	81.6		No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3192	L5959_L1_3192	MA03 L5959	371550	385350	70	SCL - Sandy clay loam	7.5YR6/2	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3192	L5959_L2_3192	MA03 L5959	371550	385350	120	C - Clay	7.5YR4/6	Very firm	Poor	Yes	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	0	0	0	Soft	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3194	L5959_T_3194	MA03 L5959	371700	385400	32	MZCL - Silty clay loam (medium)	7.5YR5/2	Firm	N/A	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							No	1	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3194	L5959_U_3194	MA03 L5959	371700	385400	46	MZCL - Silty clay loam (medium)	7.5YR6/2	Firm	Moderate	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							No	1	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3194	L5959_L1_3194	MA03 L5959	371700	385400	72	MZCL - Silty clay loam (medium)	7.5YR5/2	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	1	0	0	Hard	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3194	L5959_L2_3194	MA03 L5959	371700	385400	120	MZCL - Silty clay loam (medium)	7.5YR5/1	Very firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	0	0	0	Soft	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3195	L5959_T_3195	MA03 L5959	371600	385400	30	mSL - Sandy loam (Medium)	7.5YR5/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular							No	4	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3195	L5959_U_3195	MA03 L5959	371600	385400	50	mSL - Sandy loam (Medium)	7.5YR4/2	Friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							No	4	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3195	L5959_L1_3195	MA03 L5959	371600	385400	70	MZCL - Silty clay loam (medium)	5YR4/6	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	4	0	0	Hard	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3195	L5959_L2_3195	MA03 L5959	371600	385400	120	MZCL - Silty clay loam (medium)	5YR5/3	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	0	0	0	Soft	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3196	L5959_T_3196	MA03 L5959	371700	385500	33	mSL - Sandy loam (Medium)	7.5YR5/2	Friable	N/A	Yes	700-1000mm	High resilience	Fine	Granular							No	4	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3196	L5959_U_3196	MA03 L5959	371700	385500	55	mSL - Sandy loam (Medium)	7.5YR4/2	Friable	Moderate	Yes	700-1000mm	High resilience	Fine	Granular							No	4	0	0	Hard	No	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3196	L5959_L1_3196	MA03 L5959	371700	385500	70	MZCL - Silty clay loam (medium)	5YR4/6	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	4	0	0	Hard	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3196	L5959_L2_3196	MA03 L5959	371700	385500	120	MZCL - Silty clay loam (medium)	5YR5/3	Firm	Poor	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							Yes	0	0	0	Soft	Yes	Class II	Wetness	N/A	N/A	2	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3197	L5959_T_3197	MA03 L5959	371600	385500	32	MSZL - Medium sandy silt loam	10YR4/2	Friable	N/A	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3197	L5959_U_3197	MA03 L5959	371600	385500	50	MSZL - Medium sandy silt loam	10YR5/3	Friable	Moderate	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky							No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3197	L5959_L1_3197	MA03 L5959	371600	385500	80	C - Clay	10YR6/3	Firm	Poor	Yes	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3197	L5959_L2_3197	MA03 L5959	371600	385500	120	C - Clay	10YR6/2	Firm	Poor	Yes	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	0	0	0	Soft	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	T	3199	L5959_T_3199	MA03 L5959	371600	385600	35	SCL - Sandy clay loam	10YR4/2	Firm	N/A	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky	4.6	5.9	23.8	125	64.1		No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	U	3199	L5959_U_3199	MA03 L5959	371600	385600	50	SCL - Sandy clay loam	10YR5/3	Firm	Moderate	Yes	700-1000mm	Medium resilience	Medium	Subangular Blocky	1.8	6	14.6	71.7	57.3		No	1	0	0	Hard	No	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L1	3199	L5959_L1_3199	MA03 L5959	371600	385600	80	C - Clay	10YR6/3	Firm	Poor	Yes	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	1	0	0	Hard	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3
RAC	18/09/2019	L5959	MA03	L2	3199	L5959_L2_3199	MA03 L5959	371600	385600	120	C - Clay	10YR6/2	Firm	Poor	Yes	700-1000mm	Low resilience	Coarse	Angular Blocky							Yes	0	0	0	Soft	Yes	Class III	Wetness	N/A	N/A	3a	Survey type 3

2 References

High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, MA03 Pickmere to Agden and Hulseheath, Agriculture, forestry and soils assessment*. Volume 5: Appendix AG-001-0MA03. Available online at:
<https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.