

High Speed Rail (Crewe - Manchester)

Background information and data

Land quality

BID LQ-002-0MA03

MA03: Pickmere to Agden and Hulseheath Land quality baseline data

HS2

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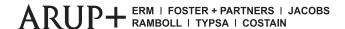
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A report prepared for High Speed Two (HS2) Limited:





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1 Introduction

- 1.1.1 This report presents land quality baseline data highlighting areas of contamination originating from historical and current land use, and mineral and geoconservation resources in the study area.
- 1.1.2 Baseline data have been collected for the Proposed Scheme in relation to the Pickmere to Agden and Hulseheath area. The baseline data in this report has been used to inform the land quality assessment which is set out in the Environmental Statement (see Volume 5, Land quality report, Appendix: LQ-001-0MA03)¹.
- 1.1.3 Sites (for example MA03-48) referred to throughout this report are contained in the Volume 5 Map Book (see Environment Statement, Volume 5 Land quality Map Book, Maps LQ-01-309b to LQ-01-312a-R1²).
- 1.1.4 The Environmental Impact Assessment Scope and Methodology Report (SMR) (see Environment Statement, Volume 5, Appendix CT-001-00001³) should be referred to for details of the land quality assessment methodology.

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Land quality report*, Volume 5, Appendix LQ-001-0MA03. Available online at:

https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Volume 5 Land quality Map Book*. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

³ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix CT-001-00001. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

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2 Receptor information

- 2.1.1 This section provides further receptor information for sites that have been evaluated in stages C and D of the land quality assessment and assessed for the Pickmere to Agden and Hulseheath area (see Environmental Statement, Volume 5, Appendix LQ-001-0MA03¹).
- 2.1.2 For each site or group of sites, further information on each site receptor can be found in Table 1 to Table 5.
- 2.1.3 For clarity, 'on-site' in this report means 'within the land required for the construction of the Proposed Scheme' and 'off-site' refers to land beyond this boundary, but within the study area. The sites and groups of sites for assessment in this area include:
 - on-site:
 - farms;
 - historical landfill; and
 - historical infilled brickwork/marl pit.
 - off-site:
 - farms; and
 - current and former tanks, likely for fuel storage.

Table 1: Receptors – farms, grouped for assessment (on-site)

Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
Current Heyrose Farm (MA03-48)	Residents and farm workers (existing site users) Walkers (adjacent site users*)	Secondary (Undifferentiated) – glacial till	Tributary of Tabley Brook (Water Framework Directive (WFD) status bad)	None	Farm buildings and residential properties (existing)	None
Current Holly House Farm (MA03-115)	Residents and farm workers (existing site users) Walkers (adjacent site users*)	Secondary A – glaciofluvial deposits Secondary B - Bollin Mudstone Member	None	None	Farm buildings and residential properties (existing)	None

^{*} adjacent site receptors located outside the land required for the construction of the Proposed Scheme (off-site) remain and are therefore included in the construction stage assessment. This applies to human and property receptors only.

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Table 2: Receptors – historical landfill (on-site)

Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
Booth Bank Farm landfill (MA03-172)	Farm workers, walkers (existing site users)	Principal – Helsby Sandstone Formation Secondary A – Shirdley Hill Sand Formation	Agden Brook (WFD status moderate)	None	None^	None
	workers and walkers (adjacent site users*)	Secondary Undifferentiated – glacial till				

^{*} adjacent site receptors located outside the land required for the construction of the Proposed Scheme (off-site) remain and are therefore included in the construction stage assessment. This applies to human and property receptors only.

Table 3: Receptors - infilled brickworks/marl pit (on-site)

Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
Historical infilled brick field and brick kiln (MA03-123)	Residents (existing site users) Residents and farm workers (adjacent site users*)	Secondary B – Bollin Mudstone Member Secondary Undifferentiated – glacial till	Tributary of Millington Clough (WFD status moderate) (adjacent) Spring at Wrenshot House (adjacent)	None	Residential property and outbuildings (adjacent)	None

^{*} adjacent site receptors located outside the land required for the construction of the Proposed Scheme (off-site) remain and are therefore included in the construction stage assessment. This applies to human and property receptors only.

Table 4: Receptors – farms, grouped for assessment (off-site)

Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
Current Hulme Barns Farm (MA03-110)	Residents and farm workers (existing site users)	Secondary A - glaciofluvial deposits Secondary B - Bollin Mudstone Formation	None	None	Farm buildings and residential property (existing)	None

[^] existing and adjacent electricity pylons only, which are not considered as part of this assessment.

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Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
	Farm workers, walkers (adjacent site users*)					
Current Yew Tree Farm (MA03-117)	Residents and farm workers (existing site) users Walkers and residents, including hotel guests (adjacent site users*)	Secondary A - glaciofluvial deposits Secondary Undifferentiated - glacial till Secondary B - Bollin Mudstone Formation	Spring at Dobb Lane	None	Farm buildings and residential properties (existing) Residential property and hotel (adjacent)	None
Current Little Moss Farm (MA03-136)	Residents and farm workers (existing site users) Farm workers (adjacent site users*)	Secondary Undifferentiated - glacial till Secondary B – Bollin Mudstone Formation	Tributary of Millington Clough (WFD status moderate)	None	Farm buildings and residential properties (on-site)	None
Current Middle Moss Farm (MA03-144)	Residents (existing site users) Walkers and farm workers (adjacent site users*)	Secondary Undifferentiated - glacial till Secondary B – Tarporley Sand Formation	Spring 200m south of Middle Moss Farm	None	Farm buildings and residential properties (existing)	None
Current Agden Lane Farm (MA03-152)	Residents and farm workers (existing site users) Residents, farm workers and walkers (adjacent site users*)	Secondary Undifferentiated - glacial till Secondary B – Tarporley Sand Formation	None	None	Farm buildings and residential properties (existing) Residential properties (adjacent)	None

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Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites	
Current Agden Hall Farm (MA03-169)	Residents and farm workers (existing site users) Walkers, farm workers and residents (adjacent site users*)	Secondary Undifferentiated - glacial till Secondary B – Tarporley Sand Formation	None	None	Residential property and farm buildings (existing)	None	

^{*} adjacent site receptors located within the land required for the construction of the Proposed Scheme (on-site) are assumed to have been removed at the construction stage and are therefore not considered in the construction stage assessment. This applies to human and property receptors only.

Table 5: Receptors - tanks, likely for fuel storage sites grouped for assessment (off-site)

Site title (site ID)	Sensitive land use (human receptor)	Aquifer designation	Surface watercourse	Geological, and ecological designations	Property e.g. buildings and structures	Geoconserv ation sites
Current tanks (MA03-104)	Fuel storage compound workers (existing site users) Residents (adjacent site users*)	Secondary Undifferentiated - glacial till Secondary B – Bollin Mudstone Member	None	None	Residential properties (adjacent)	None
Former tank (MA03-112)	Car park users (existing site users) Visitors to public house, farm workers and residents (adjacent site users*)	Secondary A – glaciofluvial deposits Secondary B – Bollin Mudstone Member	None	None	Car park (existing) Residential property, public house (adjacent)	None

^{*} adjacent site receptors located within the land required for the construction of the Proposed Scheme (on-site) are assumed to have been removed at the construction stage and are therefore not considered in the construction stage assessment. This applies to human and property receptors only.

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3 Minerals data

3.1.1 All relevant information relating to minerals and planning in the Pickmere to Agden and Hulseheath area is provided in the Environmental Statement, Volume 2, Land Quality, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 10⁴.

⁴ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*, *Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 10 Land quality*. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

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4 Geological Sites of Special Scientific Interest and local geological sites

4.1.1 No geological Sites of Special Scientific Interest (SSSI) or local geological sites (LGS) are present in the Pickmere to Agden and Hulseheath area.

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5 Other sources of data and information

- 5.1.1 Other sources of baseline data and information that are deemed necessary include:
 - data gained from local authorities regarding contaminated land;
 - historical ground investigation reports submitted as part of planning applications;
 - landfill sites; and
 - foot and mouth burial sites.

5.2 Local authorities contaminated site data

5.2.1 Sites potentially considered as contaminated land by Cheshire East Council (CEC) have been listed in Table 6. No data was provided by Cheshire West and Chester (CWCC) Council.

Table 6: Summary of contaminated site data from local authorities

Site location/ grid reference	Relevant site ID	Description	Comment
371114 378191	-	Embankment	Not identified as a potential contamination site.
371783 382567	MA03-104	Tanks	Included in the detailed assessment.
372313 379321	MA03-273	Depot	Not considered in the detailed assessment.
371919 382644	MA03-109	Garage	Not considered in the detailed assessment.
371963 382713	MA03-112	Tank	Included in the detailed assessment.
372639 381579	MA03-268	Disused gasometer	Not considered in the detailed assessment.
372166 383357	-	Disturbed ground	Not identified as a potential contamination site.
373094 383286	MA06-125	Garage	Not considered in the detailed assessment.
373230 383195	MA03-198	Depot	Not considered in the detailed assessment.
372286 384054	-	Embankment	Not identified as a potential contamination site.
371399 383098	MA03-13	Sand Pit	Not considered in the detailed assessment.
371520 383484	MA03-123	Brick Field	Included in the detailed assessment.
370204 385033	MA03-151	Depot	Not considered in the detailed assessment.

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Site location/ grid reference	Relevant site ID	Description	Comment
370369 385120	MA03-156	Brick Field	Not considered in the detailed assessment.
371992 385465	MA03-156	Landfill	Not considered in the detailed assessment.
371313 386186	MA03-177	Quarry	Not considered in the detailed assessment.
371911 386552	MA03-182	Smithy	Not considered in the detailed assessment.

⁻ refers to sites not identified as potential contaminative sites and therefore a unique identifier ID has not been assigned.

5.3 Planning applications

5.3.1 Available historical ground investigation reports submitted as part of the planning application process are outlined in Table 7.

Table 7: Summary of ground investigation reports from local authority planning applications

Planning reference and location	Relevant site ID	Description	Comment
15/5341M. Mere Garage, Warrington Road, Mere	MA03-109	Site investigation report including discussion on results of groundwater and soil samples for the purpose of site redevelopment.	Not considered in the detailed assessment.

5.4 Landfill site data

5.4.1 Table 8 presents information provided by CEC regarding landfill sites identified within the study area. No data were provided by CWCC.

Table 8: Summary of ground investigation reports from local authority planning applications

Landfill permit number and location / grid reference	Relevant site ID	Description	Comment
EAHLD35024 371989, 385462	MA03-172	Anecdotal evidence that this historical landfill contains material excavated during the construction of the M56 Motorway.	Included in the detailed assessment.

5.5 Foot and mouth burial sites

5.5.1 Information provided by CEC regarding foot and mouth burial sites located within the study area is presented in Table 9. Records provide the farm address but not the precise location of the burial site on the farm. The unique ID applied in the assessment and whether the farm has been taken to detailed assessment stage is also included.

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Table 9: Summary of foot and mouth burial sites

Site Name (relevant ID)	Details	Comment
Bowden View Farm	Cattle: 100	Not considered in the detailed assessment.
Gore Farm (now Winterbottom Farm and Mere Heyes Farm)	Unknown	Not considered in the detailed assessment.

5.6 Other regulatory data

5.6.1 Regulatory data reviewed include pollution incidents (major, significant and minor categories), radioactive and hazardous substances consents, environmental permits (integrated pollution control and integrated pollution prevention and control licences), ecological receptors and discharge consents. Details are provided in Table 10 below.

Table 10: Summary of other regulatory data

Data	Description
Discharge consents	Environment Agency data indicate that there are 32 discharge consents to surface water, 12 of which are active, within the study area.
Environmental permits	There are three petrol stations with local authority pollution prevention and control permits in the study area.
Ecological SSSI	Tabley Mere is an SSSI located approximately 1km north of Plumley.
Local Wildlife Sites (LWS)	There are six LWS in the study area, including three partially within land required for the construction of the Proposed Scheme: Leonard's and Smoker Woods, Arley and Waterless Brook Corridor, Bongs Wood and Rough, Rinks Wood and Round Wood, Belt Wood, and Tabley Pipe Wood.

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6 Site visit records

- 6.1.1 Records of site visits are included in the following section. Site specific visits were completed at:
 - MA03-172 Booth Bank Farm landfill; and
 - MA03-20 Flittogate Farm.

Table 11: Geo-environmental site inspection pro forma for MA03-172 Booth Bank Farm Landfill

PROJECT	Site Walkover MA03-172 Booth Bank Farm Landfill				
Lot number:	1 Land Access N/A Number(s):				
Site Name:	Booth Bank Farm landfill MA03-172				
Surveyor name:	SG and MH NGR (centre of land parcel): 372000, 385500				
Weather:	Sunny and warm	Date:	27 September 2018		

OVERVIEW SITE DESCRIPTION

Site comprises a historical landfill site which is now viewed as large grassed field. A pylon is present along the southern edge and a hawthorn hedge along the eastern boundary of the site.

TOPOGRAPHY

Lowest point at south-eastern corner, rising 10m towards pylon. Generally smooth surface to field with no significant depressions in the surface noted.

SOIL QUALITY

Where exposed, organic rich soil visible with minimal evidence of man-made materials present and no contamination observed.

MINING EVIDENCE

None noted.

WATER QUALITY

No standing water observed at the site.

SITE DRAINAGE

No drainage features were observed as part of the site visit.

VEGETATION COVER

Largely thick grass cover (~98%) across field

Hawthorn hedges around the northern, eastern and southern boundaries of the site. (Western site boundary was not evident as it lies within the open field.)

ECOLOGICAL ISSUES (OUTLINE)

No ecological issues observed

BUILDINGS AND LARGE INFRASTRUCTURE (if applicable)

Electricity pylon present along southern edge of site.

ANCILLARY INFRASTRUCTURE (if applicable)

No ancillary infrastructure was observed at the site, although service marker posts at the field boundaries indicate that buried services (including gas lines) are present.

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PROJECT	Site Walkover MA03-172 Booth Bank Farm Landfill			
SITE OPERATION	SITE OPERATION (PAST AND PRESENT)			
Historical land	fill, now grazing land although not grazed at time of walkover.			
VISUAL OR AN	IECDOTAL EVIDENCE OF CONTAMINATION			
Landfill known	to be present beneath the site, however no evidence of contamination observed from this.			
SURROUNDIN	SURROUNDING LAND USE			
NORTH	Farmland – likely for grazing but no grazing at the time of walkover			
EAST	Farmland (arable)			
WEST	M56, farmland beyond (arable)			
SOUTH	Farmland – likely for grazing but no grazing at the time of walkover			
GENERAL	None			
MISCELLANEC	OUS COMMENTS/NOTES			
None				

Table 12: Geo-environmental site inspection pro forma for MA03-20 Flittogate Farm

PROJECT	Site Walkover MA03-172 Flittogate Farm				
Lot number:	1 Land Access N/A Number(s):				
Site Name:	Flittogate Farm MA03-20				
Surveyor name:	JS and SG NGR (centre of land parcel): 370720, 378180				
Weather:	Sunny, cold Date: 12 December 2018				

OVERVIEW SITE DESCRIPTION

Residential house with garden. Farm outbuildings to east of house and fields surrounding site.

TOPOGRAPHY

Flat

SOIL QUALITY

No soil visible around farm buildings – hardstanding approximately 80% coverage. Fields and garden grassed so no soil visible.

MINING EVIDENCE

None noted

WATER QUALITY

No standing water observed at the site.

SITE DRAINAGE

No drainage features were observed as part of the site visit.

VEGETATION COVER

Grass (~20% - largely hardstanding). Some shrubs in garden

ECOLOGICAL ISSUES (OUTLINE)

No ecological issues observed

BUILDINGS AND LARGE INFRASTRUCTURE (if applicable)

Approximately seven brick or metal construction farm outbuildings ranging from approximately 20m² to 750m². Brick structures in general poor state of repair

New hay store and hardstanding for farm equipment

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ANCILLARY	INFRASTRUCTURE (if applicable)
Residential fa	arm (arable and livestock)
SITE OPERAT	TION (PAST AND PRESENT)
Residential fa	arm (arable and livestock)
VISUAL OR A	ANECDOTAL EVIDENCE OF CONTAMINATION
No evidence	of contamination observed
SURROUND	ING LAND USE
NORTH	Fields (arable)
EAST	Fields (arable)
WEST	Fields (likely for grazing although none present at time of walkover)
SOUTH	Fields (grazing sheep)
GENERAL	None
MISCELLANI	EOUS COMMENTS/NOTES

Observed from Public Rights of Way only

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7 References

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