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PHASE I GEO-ENVIRONMENTAL DESK STUDY

JAGUAR LAND ROVER, HALEWOOD, EASTLANDS

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GBX REMEDIATION

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Appendix E	Materials Management Plan, Halewood, Arcadis Consultants, June 2017 (TEXT)

1.0 INTRODUCTION

1.1 Brief

1.1.1 LandWise Consulting Ltd were commissioned by GBX Remediation Ltd (the Remediation Specialist), on behalf of Beech Group Limited (The Client) to undertake a Phase 1 Geo-Environmental Desk Study for a site of approximately 5.46 Ha in area titled 'Jaguar Land Rover, Halewood, Eastlands' (refer Drawing No. LW25/136/DRG/DS/01 and 02).

1.1.2 We understand that the proposed re-development includes the formation of an area of car parking with associated road infrastructure, drainage and lighting. We understand that the re-development will necessarily involve the relocation of 2 No. large bunds of soil that were formed as part of the previous development at the site.

1.1.3 The objectives of the study were:

- a) To clarify the historical background of the site with particular regard to any former contaminative usages or development.
- b) To provide information on nearby groundwater and surface water courses surrounding the site.
- c) To provide an indication of the geological conditions beneath the site and its environs.
- d) To recognise any nearby historical pollution incidents which may have resulted in contamination issued to the soils or water environment on site.
- e) To identify the possible presence and assess potential risks associated with chemical and gas contamination.
- f) To identify the possible presence and assess potential risks associated with historical underground mine workings and quarrying activities.

1.1.4 This report details the findings of our geo-environmental desk study researches.

1.2 Information Sources

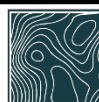
1.2.1 The following sources of information have been utilised in the compilation of this report:

- Site Walkover (undertaken on 6th January 2026)
- Review of Publicly Available Information (Appendix A)
- Envirocheck Report (with Historical OS Maps) (Appendix B)
- Site Investigation Report, East Site, Silkstone Environmental Ltd, April 2016 (Appendix C)
- Remediation Strategy, Landscape Bunds, Trailer Park, Eastland, Arcadis, March 2017 (Appendix D)
- Materials Management Plan, Halewood, Arcadis Consultants, June 2017 (Appendix E)



Site: Jaguar Land Rover, Halewood, Eastlands
Ref: LW25-136

Drawing No.
 LW25-136/DRG/DS/01



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Title:
Location Plan

Scale
 Not to Scale

Drawn
 AT

Approved
 HOL

Revision
 01

Date
 29/01/2026



Site: Jaguar, Land Rover, Halewood,
Eastlands
Ref: LW25-136

Drawing No.
LW25-136/DRG/DS/02



LandWise
geo-environmental consultants

Title:
Site Layout Plan

Scale.
Not to Scale

Drawn
AT

Approved
HOL

Revision.
01

Date
29/01/2026

1.3 **General Methodology**

- 1.3.1 The studies involved documentary researches of available information on the historical background and the geological conditions at the site. This included examination of past and present Ordnance Survey maps, British Geological Survey records and other available information such as previous investigations and assessment by others.
- 1.3.2 These researches have provided a valuable insight into the historical site development and in the surrounding area. Consequently, an indication of potential constraints related to processes associated with its previous land use or the geological conditions has been attained.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Details

2.1.1 The summary details of the site as understood from supplied information were as follows:

Table 01 – Site Details

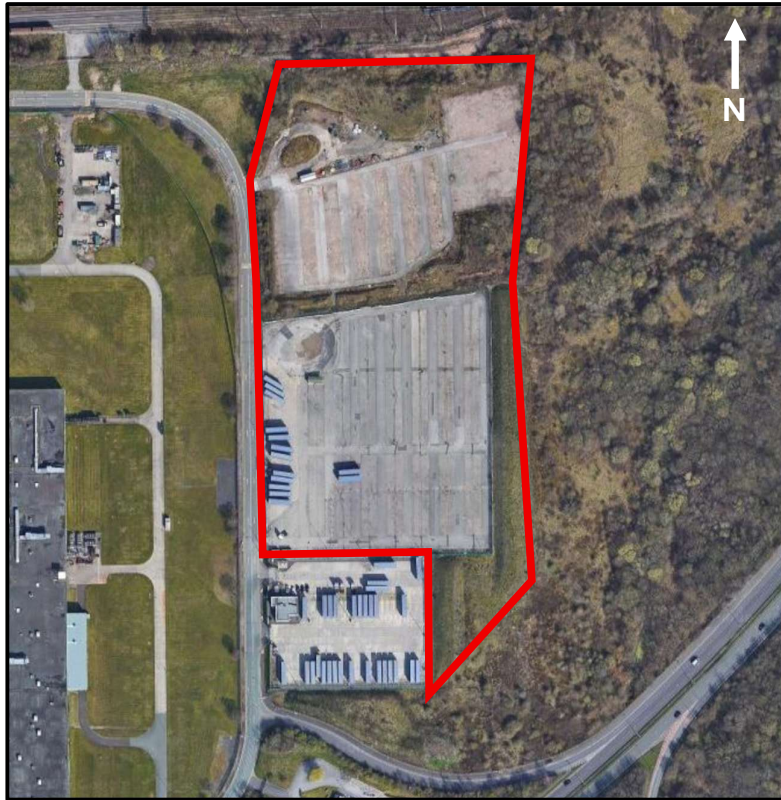
Site Name:	Jaguar Land Rover, Halewood, Eastlands
National Grid Reference	E345590 N384270 (Site Centre)
Total Site Areas:	Approximately 5.46 Ha
Local Authority	Knowsley Council
Current Usage	The north of the site is occupied by an area of car parking, the south of the site is occupied by a storage yard for HGV trailers.
Access	The vehicular access to both the car park and storage yard areas of the site is from East Road to the west of the site.
Topography	The site is generally noted to be flat lying, having been platformed to create level surfaces for car/trailer parking. There are however areas out with the areas of car/trailer parking where soil stockpiles and bunds are present. These are described below Northern stockpile – this is located within the northernmost site area. The topographic survey indicates this bund to rise approximately 2.50m above the northern car parking area. Central stockpile – this is located between the northern car parking area and southern trailer park area. This rises to approximately 1.0m above the northern car parking area and southern trailer park area in the west and approximately 2.0m above the northern car parking area and southern trailer park area in the east. Eastern bund (with environmental cap) – this is located to the east of the trailer park and is indicated to rise to a level of 3.0m above the trailer park. The volume of material in this bund is estimated to be approximately 8,660m³. South Eastern bund (with environmental cap) – This is located to the south east of the trailer park. We do not hold topographic survey information for this bund but understand that the volume is estimated at approximately 3,000m³.
Surface Conditions	Approximately 30% of the site is surfaced by tarmac or concrete hardstanding. Approximately 40% of the site is surfaced by gravel/aggregates. The remaining 30% is surfaced by banded soil stockpiles and rough vegetation.

2.2 Neighbouring Land Uses (within the immediate surrounding area)

- 2.2.1
- North - Railway sidings.
 - South - HGV trailer yard and logistics office.
 - East - Undeveloped immature woodland with Speke Boulevard/A561 dual carriageway beyond.
 - West - East Road with automotive works buildings beyond.

- 2.2.2 A satellite image of the site to provide further context is provided as Plate 01 overleaf.

Plate 01 - Aerial view of the site (Courtesy of Google Maps, dated 2022)



2.3 Watercourses

- 2.3.1 The nearest identified watercourse indicated within the Envirocheck Report (Appendix B) is the Ram's Brook 58 m southeast of the site, which flows to the south towards the River Mersey. This water course was not classified by the Environment Agency.
- 2.3.2 The nearest surface water feature classified by the Environment Agency is the Mersey Estuary (ID: GB531206908100), approximately 1.9 km south of the site, which was classified as having 'moderate ecological status' in 2022 (Appendix A).
- 2.3.3 The 'DEFRA Magic Map' (Appendix A) indicates the presence of a superficial aquifer, designated as an undifferentiated secondary aquifer, that is to say it is of mixed permeability and therefore minor value. The underlying bedrock aquifer was the Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers Water Body (ID: GB41201G101700) which was classified by the Environment Agency as having an overall 'poor' in 2019 (Appendix A). The Environment Agency classified the vulnerability of the groundwater to be 'low' (Appendix A)
- 2.3.4 We considered both the Rams Brook surface water and the North Merseyside Permo-Triassic Sandstone bedrock aquifer to be potential sensitive receptors.

2.4 Flooding

- 2.4.1 The BGS flood risk data indicate that the site is in an area with limited potential for groundwater flooding to occur (Appendix B). A review of online Environment Agency flood map (Appendix A) data indicates that there is localised risk of surface water flooding within areas of the site, including high risk areas (more than 3.3% annual chance) in the south and east of the HGV trailer storage yard. The Environment Agency flood maps do not indicate a risk from river or sea flooding.

2.5 Public Register Information

- 2.5.1 Our desk study researches involved data acquisition and the examination of various documents on the geological and historical background of the site. The general findings were as follows:

Table 02 – Public Register Information

Discharge Consents	There were no discharge consents recorded within the site or within 500 m site.
Recorded Landfill Site	A landfill titled 'Crab Tree Rough' was noted in historical and local authority data sets. This landfill covers almost the full site area, with the exception of the southern site boundary. The waste type associated with this landfill was given as 'rubble'.
Potentially Infilled Land	An area of potentially infilled land was noted in the northwest of the site associated with an infilled pond. An additional infilled pond was recorded 17 m southwest of the site. An additional 16 No. areas of potentially infilled land (all associated with previously recorded water features) were noted 250-500 m from the site. The nature of the infilled material was not indicated on the datasheets.
Registered Waste Treatment or Disposal Sites	None recorded within 250 m of the site. 1 No. waste management associated with the wider Jaguar Land Rover works was recorded 611 m to the west of the site. Additionally, a waste transfer station was operated by United Utilities 778 m to the southeast on a site associated with a current waste transfer site operated by North West Water 774 m southeast of the site.
Local Authority Pollution Prevention and Control	None recorded within 250 m of the site. 2 No. recorded on the wider Ford / Jaguar Land Rover site associated with combustion plants 456 m and 969 m west of the site.
Discharge Consents	None within 500 m of the site. 2 No. discharge consents were recorded 865 m north of the site operated by Everton Football Club. These discharges, for freshwater and sewage and trade effluent, were to a tributary of the Ditton Brook, which is outwith the catchment of the nearest watercourse to the site.
Water Abstractions	None recorded within 500 m of the site.
Source Protection Zones	The site is within the total catchment area (Zone III) of a protected groundwater source.
BGS Recorded Mineral Sites	There were no BGS recorded mineral sites within 1 km of the site.
Radon Gas	The UK Radon map indicates that 1-3% of homes whereby basic radon protection measures may be required (Appendix A).
Trade Entries	There were no recorded trade entries within the site or within 250 m of the site. 7 No. contemporary trade entries were recorded 250-500 m from the site associated primarily with the automotive industry.
Tanks	The Envirocheck Report highlighted the presence of point of interest entries for generic 'tanks' 276-336 m west of the site, associated with the motor works.

Table 02 – Public Register Information (Contd.)

Unexploded Ordnance	As part of our researches, we have retrieved a UXO risk map from Zetica UXO (refer to Appendix A), which indicated that the site is located within a low-risk area from unexploded ordnance.
Sensitive Land Uses	No sensitive land uses were recorded within the site. A nitrate vulnerable zone was indicated 5 m north of the site. An area of ancient woodland 'Mill Wood' was recorded 235 m southeast of the site. Areas of adopted green belt were noted beyond 126 m to the south and east of the site.

- 2.5.2 In the compilation of the table overleaf, we have listed the key geo-environmental impact sources identified within the Envirocheck report. In each of these cases, we have assigned a notional risk level based on a qualitative assessment of the potential for a defined hazard to impact on the site and its users. Where the risk is estimated to be 'low', we consider that there is sufficient information available to suggest that the indicated source is unlikely to have any material effect on the site and its intended usage. Where a 'moderate' risk is shown, we consider that circumstances could reasonably arise where the site and its users could be impacted by the identified source. In the case of an assigned 'high' risk, we consider that there is sufficient information to indicate that the site will be impacted by the defined source.

Table 03 – Summary of Envirocheck Records of Potential Impact Sources within 250 m of the Site*

Potential Impact Source	Distance (m)	Details	Impact Risk
Mineral Sites including shafts, adits and collieries.	0	There was no evidence of mineral abstraction within a potential impact distance of the site.	Low
Discharge Consents	<250	There were no discharge consents within likely impact distance of the site.	Low
Radon	0	It was indicated the site was within an area where 1-3% of properties may be affected by radon. Given the proposed development consists of an area of car parking it is considered that there is no potential impact from radon. Further assessment would be necessary should proposals change to include enclosed buildings.	Low
Flooding (SEPA Flood Map)	0	Localised areas of flood risk; refer to section 2.4	Moderate
Current On-site Contamination	0	It was indicated that the majority of the site area was used as a landfill, associated with the motor works to the west of the site. We considered that contamination from heavy metals, PAHs and TPHs were possible within made ground deposits on site.	High
Current Off-site Contamination Sources	0-250	The site is part of a wider industrial complex associated with the automotive industry.	Low

* Refer to site sensitivity datasheets and historical maps included in Appendix B.

2.6 Service Information

- 2.6.1 As part of our researches, public utilities plans including gas, electricity, water, sewage and telecommunications services were acquired. There was no indication of any public utilities within these plans. We note that during the walkover survey manholes were recorded in the west of the site and light posts were noted in the southern site area. As such we considered that there would be a presence of privately maintained services within the site area.

2.7 **Invasive Plant Species**

- 2.7.1 No invasive plant species were noted during the walkover survey; however, we recommend that a survey is carried out by a specialist contractor during the growing season (i.e April to September).

3.0 HISTORICAL BACKGROUND

3.1 General

- 3.1.1 An examination of the history of a site can often provide valuable information relating to potential constraints to its development. To facilitate these investigations, copies of historical Ordnance Survey maps contained within the Envirocheck report (Appendix B) and other historical data were examined, with particular attention being focused on former site uses and the presence of any industrial processes in the vicinity of the study area. It should be noted that considerable periods of time have elapsed between successive Ordnance Survey map editions and the possibility that further land uses occurred in the intervening years, which were not recorded on the maps, cannot be discounted.

3.2 Historical Background

Table 04 – Summary of History (Ordnance Survey Map Records)

Ordnance Survey Map Edition (Scale)	The Site	Immediate Surrounding Area
1849 - 1896 (1: 10,560 scale) 1893 (1:2,500 scale)	- The majority of the site was unoccupied and presumed to be used for agriculture. - An area of woodland was recorded near the centre of the site. This was connected to an area of woodland to the east of the site named 'Crab Tree Rough'. In the 1849 edition a thin strip of woodland also extended to the west of the site, however this had been felled by 1893. - A fence was recorded in the northwest of the site heading north/south and a fence was recorded in the west of the site heading west/east. 3 No. small ponds were recorded within the woodland area of the site in a line heading southeast.	- Small ponds were recorded 20 m south and 40 m east of the site. - A drainage ditch was recorded approximately 20 m to the southeast of the site, draining towards the south and a confluence with Ram's Brook approximately 300 m south of the site. - The wider area was noted to be largely agricultural with pockets of residential development; the nearest settlement is Old Manor House and Ramsbrook Farm 500 m east of the site. - A more extensive area of woodland connected to Crab Tree Rough named 'Hop Yard Wood' and 'Mill Wood' was recorded 250-700 m south and southeast of the site. 2 No. buildings with moats were recorded 500-700 m to the southwest and west.
1907 - 1927 (1:2500 scale) 1908 - 1928 (1:10,560 scale)	No changes noted on site.	No significant changes were noted.
1936 (1:2500 scale) 1938 (1:10,560 scale)	No significant changes were noted on site.	Significant residential development along Higher Road 350-1,000 m northwest of the site.
1954 - 1968 (1:2,500 scale) 1949-1956 (1:10,000 scale)	- The woodland on site was no longer recorded. - By 1966 the site was bound to the west by East Road. - In the 1966 edition the 3 No. small ponds were noted to be connected to a drainage ditch which flowed southwest across the western site boundary. 2 No. additional ponds were also recorded, connected to a separate parallel drainage ditch slightly to the north. - By the 1968 edition only the southeasternmost pond remained.	- A portion of the Crab Tree Rough to the west of the site was no longer recorded. - By the 1966 edition there was significant expansion of the railway sidings to the north which were now labelled 'Fords Sidings' and within 20 m to the north of the site. - A set of overhead pylons was recorded heading east/west 60 m north of the site. - By 1966 motor car works was recorded 120-1,300 m to the west of the site consisting of two large works buildings and associated ancillary buildings, roadways railways. - Speke Boulevard, a major roadway, with embankments and slip roads, was recorded 90 m to the southeast of the site. - Significant residential developments with associated schools were noted beyond 500 to the northwest and southwest.

Table 04 – Summary of History (Ordnance Survey Map Records) (Contd.)

Ordnance Survey Map Edition (Scale)	The Site	Immediate Surrounding Area
1994 – 1995 (1:1,250 scale) 1999 (1:10,000 scale)	- The pond and drains which remained in the previous edition were no longer recorded. - A track was recorded through the central site area trending east/west. - A hardstanding laydown/storage area was recorded in the southwest of the site, tying into East Road.	Some residential development was recorded 250 m northwest of the site.
1970 - 1977 (1:10,000 scale) 1971 (1:2,500 scale)	No changes noted on site.	A sewage works was recorded 600-900 m to the southeast.
2000 (Aerial Image)	- The north of the site had been stripped of vegetation and was being used as storage. Vehicles were visible on this area of the site, as well stockpiled materials. - HGV trailers were visible in the laydown/storage area in the southwest of the site. - A bund or embankment was visible, separating the northern and southern site areas as well as along the western site boundary in the north of the site.	A number of HGV trailers were visible on the road network associated with the motor works to the west of the site.
2005 Satellite Imagery*	With the exception of vehicles and materials being removed from the northern site area, no significant changes are noted.	No significant changes noted
2006 (1:10,000)	No changes noted on site.	The railways into and out of the motor works were no longer recorded, however the sidings to the north were unchanged.
2009 Satellite Imagery*	No significant changes noted	No significant changes noted
2012 Satellite Imagery*	With the exception of perhaps approximately 20 wagon size stockpiles of material visible within the northern site area and vegetative growth across the northern site area, no significant changes noted	No significant changes noted
2013 Satellite Imagery*	No significant changes noted	No significant changes noted
2015 Satellite Imagery*	- Northern site area has been surfaced in tarmac and gravel (current layout) and is being used for car parking. - Soil has been placed to the north of the northern car park.	No significant changes noted
2016 Satellite Imagery*	- Minor earthworks/topsoil strip evident in southern site area. - Vegetation has established on the soil which was placed to the north of the northern car park.	No significant changes noted
2018 Satellite Imagery*	- Southern site area has been developed as parking area (current layout) - Eastern and south eastern soils bunds present. - Further soils have been placed to the north of the northern car park. This area also appears to be used for materials storage. The materials are difficult to ascertain but appear to be fencing, pallets, troughs and cable drums for example.	No significant changes noted
2019 Satellite Imagery*	- Northern site are used for trailer parking - Southern site area used for car parking	No significant changes noted
2020 & 2021 Satellite Imagery*	Northern and Southern site areas not in use for parking	No significant changes noted

Table 04 – Summary of History (Ordnance Survey Map Records) (Contd.)

Ordnance Survey Map Edition (Scale)	The Site	Immediate Surrounding Area
2023 Satellite Imagery*	- It appears large volumes of granular material have been imported to the northern site area, the majority being spread in the north eastern site area. - The aforementioned soil placed to the north of the northern car park appears to have been regraded to remove steep sides. - The northern car park appears to be used for storage of bulk materials, potentially timber.	No significant changes noted
2022 Satellite Imagery*	- Southern site area used for trailer parking. - Earthworks underway in north eastern site area.	No significant changes noted
2025 Satellite Imagery*	- It appears the aforementioned bulk materials are no longer stored on the site. - The presence of an excavator and dozer suggests that localised earthworks is taking place in the area to the north of the northern car park.	- An HGV trailer yard and small logistics building were recorded to the immediate south of the site. - An off-road driving track had been developed 70 m southwest of the site. - There was significant residential development 200-500 m north of the site.

*Google Earth (image © 2025 Maxar Technologies, image © 2025 The geoinformation group, image © 2025 Infoterra ltd and Bluesky, image © 2025

GetMapping plc, image © 2025 Airbus)

3.2.1 At the time of the earliest Ordnance Survey maps dating from 1849 indicate that the site was undeveloped and occupied by farmland and woodland. Since the 1960s the site has been associated with the motor works to the west; the woodland was also cleared around this time. Whilst the use of the site as landfill was not recorded within the available OS data, we understand that at some point since the 1960s the site was used for this purpose with the associating waste rubble originating from the wider motor works site. By the 1990s a small section on the western site boundary of the southern site area was used as a laydown or storage area. The northern site area was developed for car parking circa 2000. The movement of soils materials to the north of the northern parking area is evident from 2013 until recently. The southern area was developed for trailer parking between 2016 and 2018. The formation of soil bunds to the east and south east of the southern trailer park is associated with the southern trailer park development.

3.2.2 The surrounding area was largely agricultural, with sporadic residential developments, until the 1930s when significant residential developments began to appear to the northwest of the site. By the late 1940s there was significant development in the surrounding area associated with Speke to the south of the site. The most significant development in the surrounding area occurred in the early 1960s with the development of the motor works 120-1,300 m to the west of the site, with associated developments such as railway sidings to the north of the site. Since this time there has been additional residential and infrastructural development in the wider area. Most recently between 2006 and 2025 additional developments on the motor works site such as an HGV trailer yard and logistics building to the immediate south of the site.

4.0 PREVIOUS INVESTIGATIONS AND ASSESSMENT

4.1 General

- 4.1.1 LandWise Consulting have been provided with previous reporting by Silkstone Environmental Limited and Arcadis Consultants covering the southern and central site areas.

4.2 Previous Investigations

- 4.2.1 LandWise Consulting have been provided with the following reports which pertain to the development of the southern trailer park.

- Site Investigation Report, East Site, Silkstone Environmental Ltd (SEL), April 2016 – Pertains to investigations undertaken within the southern site area (trailer park)
- Remediation Strategy, Landscape Bunds, Trailer Park, Eastland, Arcadis consultants, March 2017 – Pertains to the remediation strategy with respect to asbestos impacted soils including the formation of a bund located within the south eastern site area and an existing bund to the east of the trailer park.
- Materials Management Plan, Halewood, Arcadis consultants, June 2017 – Pertains to the earthworks materials management of the site along north road and the two bunds at eastlands, one bund of which is located within the subject site (south east of trailer park).

- 4.2.2 As part of the compilation of this desk study we considered it prudent to review previous reporting in respect to the subject site and present a summary in the following sections;

4.3 Site Investigation Report, East Site, Silkstone Environmental Ltd, April 2016

- 4.3.1 The Phase 2 intrusive investigation involved the excavation of 32 No trial pits with associated sampling and testing. Of the 32 No trial pits undertaken, 16 No are located within the subject site, specifically, the area of the existing southern trailer park, soil bund to the east of the trailer park and the soil bund to the south east of the trailer park. 4 No dynamic super heavy probes were undertaken as part of the investigation however only 1 No was located within the subject site, referred to as DS01 and located in the south western area of the southern trailer park.

Recorded Ground Conditions

- 4.3.2 We have reviewed those logs of trial pits undertaken within the subject site. A summary of these is presented in Table 05 overleaf.
- 4.3.3 A copy of the report text including the trial pit logs pertaining to the subject site are included in Appendix C.

Table 05 – Summary of Trial Pit Soil Logs - Site Investigation Report, East Site, Silkstone Environmental Ltd, April 2016

Depth	TP01	TP11	TP12	TP13	TP14	TP15	TP16	TP17	TP18	TP19	TP21	TP22	TP24	TP25	TP27	TP32				
0.10	Sandy gravel with brick, concrete, glass and plastic	Sandy gravelly clay with high cobble content of brick and concrete	Sandy gravel and cobbles of brick and concrete	Sandy gravel with high cobble content of brick and concrete with rags, paper	Sandy gravel with high cobble content of brick, concrete and timber	Sandy gravelly clay		Sandy ash gravel	Sandy gravel of concrete and brick	Sandy gravelly clay with high cobble content of brick and concrete		Gravel	Sandy gravelly clay with high cobble and boulder content of brick and concrete and possible asbestos sheetings			Sandy gravelly clay with high cobble and boulder content of concrete and brick.				
0.20						Gravel of concrete and limestone		Sandy gravelly clay with high cobble content of oil staining		Ash with timber and glass							Sandy gravelly clay with high cobble content of brick and concrete	Cobbles and boulders of brick, concrete and sandstone		
0.30						Sandy gravel of brick, tar and concrete													Clayey gravel of brick, tar and concrete	
0.40	Gravelly Sand with high cobble content of brick and concrete				Sand	Sandy gravel with high cobble content of brick and concrete			Sandy gravelly clay with low cobble content								Sandy gravelly clay with high cobble and boulder content of concrete, brick, slate and metal pipes.	Sandy gravelly clay with high cobble and boulder content of concrete, brick, wire, metal and plastic fragments		Brick sets
0.50																				
0.60																				
0.70																				
0.80		Stiff sandy gravelly CLAY	Sandy gravelly clay with high cobble content of brick, concrete, timber	Sandy gravel with high cobble content of brick and concrete																
0.90																				
1.00																				
1.10																				
1.20	Soft sandy gravelly CLAY																			
1.30							Sandy gravelly clay with high cobble content of brick and concrete	Sandy gravelly clay with high cobble content of brick and concrete		Sandy gravelly clay with high cobble content of brick and concrete		Sandy gravelly cobbles and boulders of brick and concrete	Cobbles and boulders of brick, concrete, timber and plastic	Sandy gravelly clay with high cobble and boulder content of concrete, brick, slate and metal pipes.	Sandy gravelly clay with high cobble and boulder content of concrete, brick, wire, metal and plastic fragments	Sandy gravelly cobbles of brick and concrete				
1.40																				
1.50																				
1.60																				
1.70																				
1.80																				
1.90																				
2.00																				
2.10																				
2.20																				
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2.80																				
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3.40																				
3.50																				

- 4.3.4 Made ground was recorded across the development to depths in excess of 3.50mbgl. The majority of the made ground soils were described as sandy gravelly clay and sandy gravel with high cobble content of concrete and brick with gravels similarly comprising brick and concrete fragments. Other sub-ordinate extraneous material included glass, plastic, timber, rags, paper, slate, breeze blocks, metal pipes.
- 4.3.5 Although a consistent made ground stratigraphy is difficult to ascertain as the soils are indicated to be heterogeneous, It is noted that the granular content of the soils is indicated to decrease with depth with the common presence of sandy gravel layers within 1.0mbgl and predominantly sandy gravelly clays at greater depths.
- 4.3.6 It is also worth noting that TP21 recorded gravelly sandy ash from surface to a depth of 1.40mbgl and sandy ash gravel was recorded in TP17 which is inconsistent with the shallow made ground over the remainder of the site.
- 4.3.7 Furthermore, it is also worth noting that a layer of cobbles and boulders was recorded in the deeper made ground in TP22, TP24 and TP32, all of which are located in the south eastern site area.
- 4.3.8 Possible asbestos sheeting was recorded within the shallow made ground soils of TP24 to a depth of 0.70mbgl.
- 4.3.9 Tar fragments were recorded in TP15 at depth of between 0.30mbgl and 2.50mbgl.
- 4.3.10 In the course of the investigations natural soils were only encountered within trial pits TP01 and TP11, both located in the south west of the trailer park. Soft to stiff sandy gravelly clay was recorded in TP01 from a depth of 1.20mbgl to a depth of >3.40mbgl. stiff sandy gravelly clay was recorded in TP11 from a depth of 3.00mbgl to a depth of >3.20mbgl.
- 4.3.11 In respect to groundwater, the following was recorded within the trial pit logs pertinent to the site;

Table 06 – Summary of Recorded Water within Trial Pits

Trial Pit	Depth	Description	Soils at level of record
TP01	-	Dry	-
TP11	3.00	Slight Seepage	Sandy gravelly clay with high cobble content
TP12	-	Dry	-
TP13	1.00	Strong Seepage	Sandy gravelly with high cobble and boulder content
TP14	1.00	Strong Seepage	Sandy gravel with high cobble and boulder content.
TP15	1.20	Strong Seepage	Slightly clayey sandy gravel
TP16	1.70	Slight Seepage	Sandy very gravelly clay with high cobble content and oil staining.
TP17	-	Dry	-
TP18	-	Dry	-
TP19	1.50	Slight Seepage	Sandy gravelly clay with high cobble content
TP21	-	Dry	-
TP22	0.90	Strong Seepage	Sandy gravelly cobbles and boulders.
TP24	1.10	Strong seepage slightly oily	Cobbles and boulders
TP25	2.40	Slight Seepage	Sandy gravelly clay with high cobble and boulder content.
TP27	-	Dry	-
TP32	1.00	Seepage	Brick rubble

Geotechnical Analyses

- 4.3.12 Geotechnical analyses on the natural cohesive material recorded moisture contents of between 12 and 17%. Atterberg limit testing indicated the natural soils to have a low plasticity. The soils were recorded to have a maximum dry density of between 1.88Mg/m and 2.09Mg/m with an optimum moisture content of between 9% and 15%.

Compaction testing indicated a CBR of between 23.8% and 42.4% using a 4.5kg rammer and 6.5% and 12.2% using a 2.5kg rammer.

- 4.3.13 The Dynamic super heavy probe undertaken in the south westerns site area generally indicated N100 values of between 5 and 10 from 0.40mbgl to 1.30mbgl and N100 values of 1,2 and 3 from 1.30mbgl to 3.00mbgl.

Contamination – Human Health

- 4.3.14 26 no soils samples were submitted to Envirolab for testing at the time. Silkstone Environmental undertook an initial screening assessment using Atrisk SSV values for open space land use with 1% soil organic matter and an assumed sand soil type. SEL concluded that all contaminant concentrations recorded fell below the open space land use guideline values at the time. It should be noted that due to copyright restrictions, the Atkins Atrisk guideline values are not included within the SEL report.
- 4.3.15 LandWise Consulting have undertaken a review of the historical chemical data comparing the recorded concentrations at the time to S4UL guideline values appropriate for a commercial end use. We calculate the soil organic matter to be 2.5% on average. Comparing the recorded contaminant concentrations against the aforementioned S4UL guideline values indicates no contaminant concentrations to be recorded above the guideline values.
- 4.3.16 Asbestos screening was also undertaken on 8 No samples. Asbestos was recorded in 3 No samples described as chrysotile loose insulation (visual – ACM) in TP07 at a depth 0.70m, chrysotile loose fibres in TP11 at a depth of 1.10mbgl and chrysotile loose fibres in TP21 at a depth of 0.30mbgl. Note TP11 and TP21 are located within the subject site.

Contamination – Groundwater

- 4.3.17 4 No water samples were retrieved from the trial pit excavations, 3 No of which are located within the subject site. SEL utilised Atkins Atrisk guideline values when undertaking the groundwater risk assessment however this provided only 4 No guideline values for PAH contaminants for example. The concentration of benzo(a)anthracene was found to be in exceedance in the sample retrieved from TP16 at a depth of 1.60mbgl. SEL did not consider this elevated concentration to be significant when compared to the average site concentration. The other contaminants were compared against drinking water standards at the time. The vast majority of values fell below the drinking water standards at the time. Nickel, cadmium, arsenic and lead were recorded to have notable peak concentrations. Lead was recorded at a concentration of 1620ug/l in TP24 for example. Again, however it was concluded that when compared to site averages for lead that this concentration was acceptable. It was noted that no testing was undertaken on adjoining water courses which were stagnant during the site walkover and as such the potential impact to surface water was not further assessed.
- 4.3.18 LandWise Consulting have undertaken a review of the results of the 3 No water samples retrieved from within the subject site. The groundwater results have been compared to appropriate guideline values. Where surface water is considered a primary risk, Environment Agency EQS values derived from The Water Framework Directive (Standards and Classification) Directions (England and Wales), 2015 (WFD), have been used. Where no EQS values were available we have resorted to the WHO (4th Edition, 2017) guidelines and then laboratory limit of detection (LoD). It should be noted, for the purpose of our risk assessment we have assumed that non-detects/ concentrations below the LoD are considered to pose a low risk to the surface Controlled Waters.

TABLE 07 - Analysis of Groundwater Samples Compared with Respective Standards

Potential Contaminant	EA EQS (µg/l)	WHO (2017)	Laboratory Limit of Detection (µg/l)**	No of Samples Above Assessment Levels
Metals				
Arsenic	50	-	-	0 out of 3
Cadmium*	0.25	-	-	1 out of 3
Chromium III	4.7	-	-	3 out of 3
Copper	1	-	-	1 out of 3
Lead	1.2	-	-	3 out of 3
Mercury	0.07	-	<0.1	0 out of 3
Nickel	4	-	-	3 out of 3
Selenium	-	4	-	0 out of 3
Zinc	10.9	-	-	3 out of 3
Total Petroleum Hydrocarbons (TPHs)				
C6-C8	-	-	50	0 out of 3
C8-C10	-	-	50	0 out of 3
C10-C12	-	-	50	0 out of 3
C12-C16	-	-	50	0 out of 3
C16-C21	-	-	50	0 out of 3
C21-C40	-	-	50	1 out of 3
Total Petroleum Hydrocarbons (Aliphatics and Aromatics (C5-C35))	N/A	-	50	1 out of 3
Polycyclic Aromatic Hydrocarbons (PAHs)				
Naphthalene	2	-	-	0 out of 3
Acenaphthylene	-	-	0.01	2 out of 3
Acenaphthene	-	-	0.01	3 out of 3
Fluorene	-	-	0.01	3 out of 3
Phenanthrene	-	-	0.01	3 out of 3
Anthracene	0.1	-	-	2 out of 3
Fluoranthene	0.0063	-	-	3 out of 3
Pyrene	-	-	0.01	3 out of 3
Benzo[a]anthracene	-	-	0.01	3 out of 3
Chrysene	-	-	0.01	3 out of 3
Benzo(b)fluoranthene	0.00017	-	-	3 out of 3
Benzo(k)fluoranthene	0.00017	-	-	3 out of 3
Benzo(a)pyrene	0.00017	-	-	3 out of 3
Indeno(1,2,3-c,d)Pyrene	0.00017	-	-	3 out of 3
Dibenzo(a,h)anthracene	-	-	0.01	1 out of 3
Benzo(g,h,i)perylene	0.00017	-	-	3 out of 3
Total PAHs	-	-	N/A	
Phenols				
Phenols – Monohydric	7.7	-	-	0 out of 3

4.3.19 Concentrations of heavy metals and PAHs are indicated above guideline values. Furthermore, it should also be noted that the concentrations of C21-C40 was recorded above the limit of detection in 1 No sample. It should be noted however that in the absence of EQS guideline values for many TPH and PAH contaminants that limits of detection have been used and as such exceedances of the limit of detection do not necessarily indicate a risk to the water environment.

4.3.20 Where groundwater is considered a primary risk, Minimum Reporting Values (MRV) have been used as obtained from the Environmental Risk Assessment Framework, Environment Agency, April 2010. In the absence of an MRV we have reverted to UK Drinking Water Standards, then WHO (4th Edition, 2017) guidelines for drinking water quality and finally in the absence of these guidelines we have reverted to the laboratory limits of detection.

TABLE 08 - Analysis of Groundwater Samples Compared with Respective Standards

Potential Contaminant	MRV (ug/l)	WHO (4 th Edition, First Addendum 2017) (µg/l)	Laboratory Limit of Detection (µg/l)	No of Samples Above Assessment Levels
Metals				
Arsenic	10	-	0.2	0 out of 3
Cadmium	0.1	-	0.11	1 out of 3
Chromium	50	-	0.5	0 out of 3
Copper	2000	-	0.5	0 out of 3
Mercury (inorganic low level)	1	-	0.05	0 out of 3
Nickel	20	-	0.5	1 out of 3
Lead	10	-	0.5	4 out of 3
Selenium	10	-	0.5	0 out of 3
Zinc	-	2000	2.5	0 out of 3
Inorganics				
Sulphate	250 (mg/l)	-	1 (mg/l)	1 out of 3
Total Petroleum Hydrocarbons (TPHs)				
C6-C8	-	-	50	0 out of 3
C8-C10	-	-	50	0 out of 3
C10-C12	-	-	50	0 out of 3
C12-C16	-	-	50	0 out of 3
C16-C21	-	-	50	0 out of 3
C21-C40	-	-	50	1 out of 3
Total Petroleum Hydrocarbons (Aliphatics and Aromatics (C5-C35)	N/A	N/A	50	0 out of 3
Polycyclic Aromatic Hydrocarbons (PAHs)				
Naphthalene**	-	-	0.05	0 out of 3
Acenaphthylene**	-	-	0.01	2 out of 3
Acenaphthene**	-	-	0.01	3 out of 3
Fluorene**	-	-	0.01	3 out of 3
Phenanthrene**	-	-	0.01	3 out of 3
Anthracene**	-	-	0.01	2 out of 3
Fluoranthene	0.1	-	0.01	3 out of 3
Pyrene**	-	-	0.01	3 out of 3
Benzo(a)anthracene**	-	-	0.01	3 out of 3
Chrysene**	-	-	0.01	3 out of 3
Benzo(b)fluoranthene	0.1	-	0.01	3 out of 3
Benzo(k)fluoranthene	0.1	-	0.01	3 out of 3
Benzo(a)pyrene	0.01	-	0.01	3 out of 3
Indeno(123-cd)pyrene	0.1	-	0.01	3 out of 3
Dibenzo(a,h)anthracene*	-	-	0.01	1 out of 3
Benzo(ghi)perylene	0.1	-	0.1	3 out of 3
Total PAH's	N/A	N/A	0.2	
Phenols				
Total Phenols	-	-	0.5	0 out of 3

4.3.21 Concentrations of heavy metals and PAHs are indicated above guideline values. Furthermore, it should also be noted that the concentrations of C21-C40 was recorded above the limit of detection in 1 No sample. It should be noted however that in the absence of MRV, drinking water standards or WHO guideline values for many TPH and PAH contaminants that limits of detection have been used and as such exceedances of the limit of detection do not necessarily indicate a risk to the water environment.

4.3.22 Based on the results of the preliminary review (GQRA) it is considered that the site conditions may present a risk to both the Surface Water Environment and the Groundwater Water Environment.

4.3.23 However, the preliminary assessment does not take into account the following:

- The requirement for modelling of these concentrations to determine the potential concentrations at sensitive receptors, in this case the Ram's Brook and the underlying Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifer. Further assessment is required following retrieval, testing and modelling of further water samples.
- The proposed development which includes for hardstanding and enclosed drainage therefore reducing surface water infiltration across the site and subsequently reducing the potential contaminant loading into the shallow groundwater or surface water.
- The dilution potential of the Rams Brook or indeed the River Mersey.

4.3.24 Once all of the above is taken into account we anticipate the overall risk to the groundwater environment to be low to moderate however detailed assessment in this respect is required as part of an updated ground investigation and assessment.

4.4 **Remediation Strategy, Landscaped Bunds, Trailer Park, Eastlands, Arcadis Consultants, March 2017.**

4.4.1 This report pertains to the remediation strategy with respect to asbestos impacted soils including the formation of soils bunds using this asbestos impacted material. The report focuses on the proposed formation of 3 No soils bunds located to the east of the trailer park and to the south of the proposed trailer park at the time. Of these 3 No bunds, 2 No of which are located within the subject site, one to the east of the trailer park and one to the south east of the trailer park. Our review will focus on those bunds relevant to the subject site. A copy of the Arcadis Remediation Strategy is included in Appendix D.

4.4.2 Following the identification of asbestos impacted soils and Asbestos Containing Materials (ACMs) by SEL in March 2016, Santia Asbestos Management Ltd attended site in October 2016 to remove a small number of ACMs from site. A walkover survey in conjunction with partial soil excavation was undertaken by Santia Asbestos Management Ltd on the 10th October 2016. This identified further suspected ACMs, with analysis confirming the presence of asbestos.

4.4.3 We understand from the report that samples were also taken from topsoil and soil stockpiles in the northern site area and tested with a general suite of chemical contamination (heavy metals, PTH, PAH and asbestos) by Alcontrol laboratories in October 2016. We do not however have a copy of these results for review.

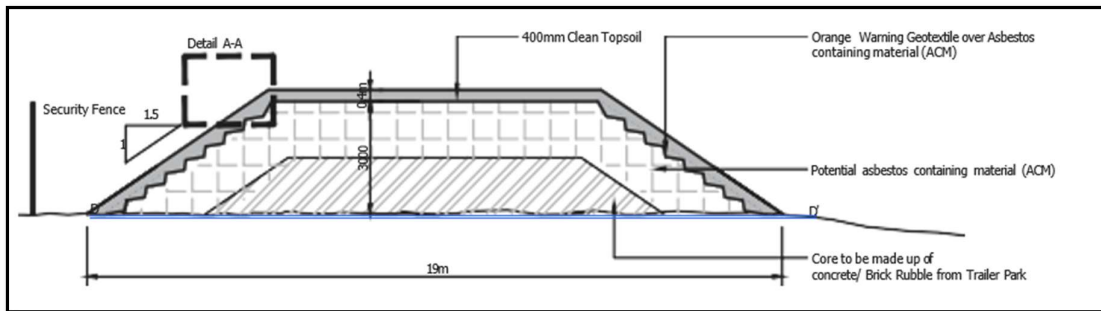
4.4.4 At the time Arcadis indicated that *during the construction of the Trailer Park, works ceased due to the identification of larger than expected quantities of asbestos found within the ground. To manage the asbestos in a safe and controlled way, it is proposed to reuse the impacted soils within the core of the new bunds under a suitably designed cap of geotextile and uncontaminated cover soil. A source of uncontaminated soil is available on site from construction works associated with the delivery of the North Road Car Park. In addition to its objectives of improving the visual appearance and security for the Trailer Park, Jaguar Land Rover is aware of the need to find ways to manage the movement of contaminated and uncontaminated soil in the most environmentally efficient way possible. This is proposed by capping the asbestos in the eastern bund with a protective membrane, and re-using the excess soil from the North Road Car Park as a clean capping layer. The uncontaminated North Car Park soils will be used to construct the entire southern bund.* Arcadis undertook pre-application discussion with Ian Gaskell (Knowsley Council) and Ben Scott (Environment Agency) to agree the scheme design and methodology at the time. This correspondence can be made available upon request.

- 4.4.5 From review of the report we understand that there were two sources of soils to be used in the construction of the proposed bunds. Arcadis provide the following detail on these soils
- 4.4.6 The source soils to be used for the core of the south east bund would be derived from the previously consented Trailer Park development.
- 4.4.7 Arcadis compared the SEL soil chemical results to commercial open pace guideline values as they considered this more appropriate considering the proposed development. They concluded *no measured concentrations of Contaminants of Concern (CoC) found in excess of the GAC and as a result the risk to future users of the development is considered to be negligible.*
- 4.4.8 Arcadis made reference to the aforementioned elevated concentration of lead from TP04 and indicated that whilst elevated relative to other samples this concentration was not considered to pose a significant impact on the proposed development.
- 4.4.9 It should be noted that the source soils for what is referred to as the southern bund in the text would be derived from the North Road Car Park development. Note this bund is not within the subject site however it is worth noting that these were considered chemically suitable for use.
- 4.4.10 As per the findings of the SEL assessment, Amosite, Crocidolite, Chrysotile asbestos was identified in the Made Ground fill materials at the Trailer Park site. The asbestos was identified in the form of free fibres (through laboratory analysis) and ACMs (pipe insulation debris, floor tiles, cement debris, rope and debris, flash guards, asbestos insulating board and debris). Arcadis considered this could potentially present an acute exposure risk to site/ construction workers and the public during the development window and in the long term should the exposed shallow soil become sufficiently dry and disturbed that fibres become airborne.
- 4.4.11 Arcadis provided detail on the proposed management of the asbestos impacted soils, an extract of which is provided below;
- The works to excavate and reuse the impacted soils would be “licensable” under the Control of Asbestos Regulations 2012 therefore the HSE will be notified and all works with asbestos impacted soils will be undertaken by a licenced asbestos contractor (Beech Group).
 - As required by the Regulations, a Plan of Work has been written which summarises all of the H&S control measures, monitoring and training that will be implemented to protect human health both during the works and in the long term.
 - All site staff working in the licensable area will have site specific training on controlling hazards from asbestos impacted materials.
 - Following industry best practice (CIRIA C733), the soils will be visually screened by qualified and competent operatives such that discernible ACM would be handpicked from the excavated soils by the contractor for “betterment”. The handpicked ACM will be removed from site as hazardous waste under full Duty of Care.
 - The picked soils will be used to form the core of the security bund to the east of the Trailer Park development. Due to the high clay content of soils in this area, the soils are considered to be geo- technically suitable and it is not anticipated that the soils would need to be stabilised.
 - A marker membrane will be placed on top of the impacted soils to create a visually discernible layer and to prevent burrowing animals and bioturbation. Should it be required, a grid terram would be used to support the cover layer of clean soils sourced from the North Road Car Park development.

- The reuse of the soils will be through a Materials Management Plan (Definition of Waste: Development Industry Code of Practice 2011), with all soils movement tracked and monitored.
- The bund containing asbestos impacted soils will be grassed and sown with a wildflower mix. No shrubs, trees or deep rooted vegetation will be planted.
- The bund where asbestos impacted soils have been reused would be placed on the Jaguar Land Rover Site Asbestos Register and surveyed regularly to monitor their condition. Any deterioration in condition would be repaired.
- To demonstrate that works have been undertaken appropriately under the Materials Management Plan a Verification Report will be compiled and a copy provided to the Local Authority and will be kept by Jaguar Land Rover for 2 years.

4.4.12 An extract from Drawing 1617-0077-WDK-SI-A-130-5703 provides the proposed detail of the bund material located in the south east of the subject site;

Environmental Capping Layer (extract from Drawing 1617-0077-WDK-SI-A-130-5703)



- 4.4.13 The drawing indicates that the bund would comprise of concrete and brick rubble from the trailer park, overlain by potential ACM containing soils, overlain by an orange geotextile, overlain by 400mm clean topsoil.
- 4.4.14 Although Drawing 1617-0077-WDK-SI-A-130-5703 does not include detail on the bund to the east of the trailer park, we understand that an environmental capping layer was incorporated here also.
- 4.4.14 It is worthy of note that Drawing 1617-0077-WDK-SI-A-130-5703 also highlights the presence of Japanese knotweed just beyond the south eastern site boundary. We recommend an invasive species survey is undertaken within the growing season and prior to the proposed site works to confirm that Japanese knotweed treatment is not required or that the potential presence of Japanese knotweed within the subject site does not impact the proposed works.

4.5 Site Materials Management Plan, Halewood, Arcadis Consultants, June 2017

4.5.1 The materials management plan (MMP) pertains to both the North Road Car Park Development and the Trailer Park development at the time. For the purpose of this review, we have only included that information relevant the subject site. A copy of the Arcadis Materials Management Plan is included in Appendix D.

4.5.2 The MMP provides a brief description of the planned project and how excavated materials are to be reused within it. An extract is provided below;

- *Soils impacted with asbestos will be chicken picked by a licenced contractor under compliance with the Control of Asbestos Regulations 2012, to remove the fragments/artefacts of ACM. The ACM will be sent for off site disposal at an appropriately licenced site. The remaining soils will be used to form the core of the new eastern bund around the Trailer Park (Site 3). Approximately 1,585m³ of impacted excavated materials. The reused materials will be covered with a geotextile and a clean capping layer installed (from North Road Car Park).*
- *Any excess impacted soil will be sent off site to an appropriately licenced facility.*
- *No treatment of the excavated materials is proposed except for the removal of any significant debris e.g. tree roots from the top soil, licenced removal of asbestos fragments. The excavated material is proposed to be reused within the JLR Halewood scheme for the following use:*
 - *Creation of a security bund to the south of the new Trailer Park from uncontaminated excavated material from North Road Car Park. (note not within subject site)*
 - *Creation of security bund to the east of the Trailer Park from ACM contaminated material from Trailer Park and the installation of clean capping soils from North Road Car Parks. (Within subject site)*
 - *Capping existing security bund at Eastlands Car Park which has been found to contain ACM with clean soils from North Road Car Parks. (Within subject site)*
- *Approximately 7,095m³ of uncontaminated sub soils or made ground will be used to create the bund core (to south bund) and top soils to dress the surface to facilitate revegetation (all bunds). Approximately 1,585m³ of contaminated excavated ground will be used to form the core of the eastern bund. The bund to the East of the car park already exists and soils are being used to cap it only.*
- *Material that is reused on site will be subject to the submittal of a Declaration (one per source area) and managed as a recovered non waste material. All materials reused will be tracked and stock piled with all analytical information and records collated in a Verification Report.*
- *Any excavated materials found to be in excess of that required, or out of scope with the MMP, will be sent off site for disposal and subject to Waste Legislation. This will be managed with regard to Duty of Care and the records collated in the Verification Report.*

4.5.3 Assessment criteria to determine suitability for use were based on Generic Assessment Criteria (GAC) for protection of human health and the environment. We understand materials reused were assessed against commercial end use GACs with the excavated materials tested at a frequency of approximately 1 sample per 1,000m³ on the topsoil, sub soil and made ground. Testing include for Metals, TPH, PAH and asbestos.

4.5.4 In summary, with respect to the soil bunds that had remedial measures incorporated, we understand that the make up of the soil bund to the south east of the trailer park is as follows; bund core comprising of concrete and brick

rubble from the trailer park, overlain by potential ACM containing soils, overlain by an orange geotextile, overlain by 400mm clean topsoil. We understand that the make up of the soil bund the east of the trailer park, which was already present in 2017, comprises of potential ACM containing soils, overlain by an orange geotextile, overlain by 400mm clean topsoil.

5.0 DOCUMENTED GROUND CONDITIONS

5.1 General

- 5.1.1 The conjectured ground conditions at the site have been assessed utilising documentary information sources such as British Geological Survey Maps and previous reporting covering the southern and central site areas by Silkstone Environmental Limited (2016), which was provided to us by the client.

5.2 Superficial Soils

- 5.2.1 Given the car parking development on site, as well as the historical use of the site as a landfill associated with the motor works, it was considered that made ground deposits would be pervasive and of significant (several meters) thickness.
- 5.2.4 The Silkstone Environmental site investigation in 2016 recorded made ground across the development to depths in excess of 3.50mbgl. The majority of the made ground soils were described as sandy gravelly clay and sandy gravel with high cobble content of concrete and brick with gravels similarly comprising brick and concrete fragments. Other sub-ordinate extraneous material included glass, plastic, timber, rags, paper, slate, breeze blocks, metal pipes.
- 5.2.5 Although a consistent made ground stratigraphy is difficult to ascertain as the soils are indicated to be heterogeneous, It is noted that the granular content of the soils is indicated to decrease with depth with the common presence of sandy gravel layers within 1.0mbgl and predominantly sandy gravelly clays at greater depths.
- 5.2.6 It is also worth noting that TP21 recorded gravelly sandy ash from surface to a depth of 1.40mbgl and sandy ashy gravel was recorded in TP17 which is inconsistent with the shallow made ground over the remainder of the site. Furthermore, it is also worth noting that a layer of cobbles and boulders was recorded in the deeper made ground in TP22, TP24 and TP32, all of which are located in the south eastern site area. Tar fragments were recorded in TP15 at depth of between 0.30mbgl and 2.50mbgl.
- 5.2.8 Possible asbestos sheeting was recorded within the shallow made ground soils of TP24 to a depth of 0.70mbgl. Asbestos was recorded in 2 No samples within the subject site, described as chrysotile loose fibres in TP11 at a depth of 1.10mbgl and chrysotile loose fibres in TP21 at a depth of 0.30mbgl. Arcadis indicated that following the identification of asbestos impacted soils and Asbestos Containing Materials (ACMs) by SEL in March 2016, Santia Asbestos Management Ltd attended site in October 2016 to remove a small number of ACMs from site. A walkover survey in conjunction with partial soil excavation was undertaken by Santia Asbestos Management Ltd on the 10th October 2016. This identified further suspected ACMs, with analysis confirming the presence of asbestos.
- 5.2.3 The British Geological Survey (BGS) Drift Lithology map recorded the natural soils to consist of Glacial Till Deposits, comprising of 'red-brown sandy stony clay with impersistent bands of sand' (refer to Drawing No. LW25/136/DRG/DS/04). Areas of Alluvium, comprising of clay, silt, sand, and gravel, were indicated along the course of Ram's Brook and its tributaries. The nearest area of these alluvial deposits is approximately 100 m to the southeast of the site. In the course of the SEL investigations natural soils were only encountered within

trial pits TP01 and TP11, both located in the south west of the trailer park. Soft to stiff sandy gravelly clay were recorded in TP01 from a depth of 1.20mbgl to a depth of >3.40mbgl. Stiff sandy gravelly clay was recorded in TP11 from a depth of 3.00mbgl to a depth of >3.20mbgl.

- 5.2.4 The thickness of superficial soils was not recorded on the BGS mapping information. There were no publicly available BGS boreholes within 500 m of the site, however, BGS boreholes approximately 670 m west (SJ48SW13) and 780 m east (SJ48SE19) of the site record drift thickness between 16.00 m and 35.60 m thick. We understand however that previous ground investigations within the Halewood facility encountered bedrock at a depth of 10.0mbgl.

5.3 Solid Geology

- 5.3.1 The BGS indicated the solid strata beneath the site to consist of sedimentary bedrock of the Kinnerton Sandstone Formation (KNSF) comprising primarily of early Triassic, red-brown to yellow, generally pebble free, fine to medium grained, sandstones (LW25/136/DRG/DS/05). No other solid geological units were recorded within 500 m of the site.

- 5.3.2 The BGS do not indicate the presence of any economic mineral outcrops such as coal or limestone within 500 m of the site.

- 5.3.3 The BGS do not indicate the presence of a geological fault within 500 m of the site.

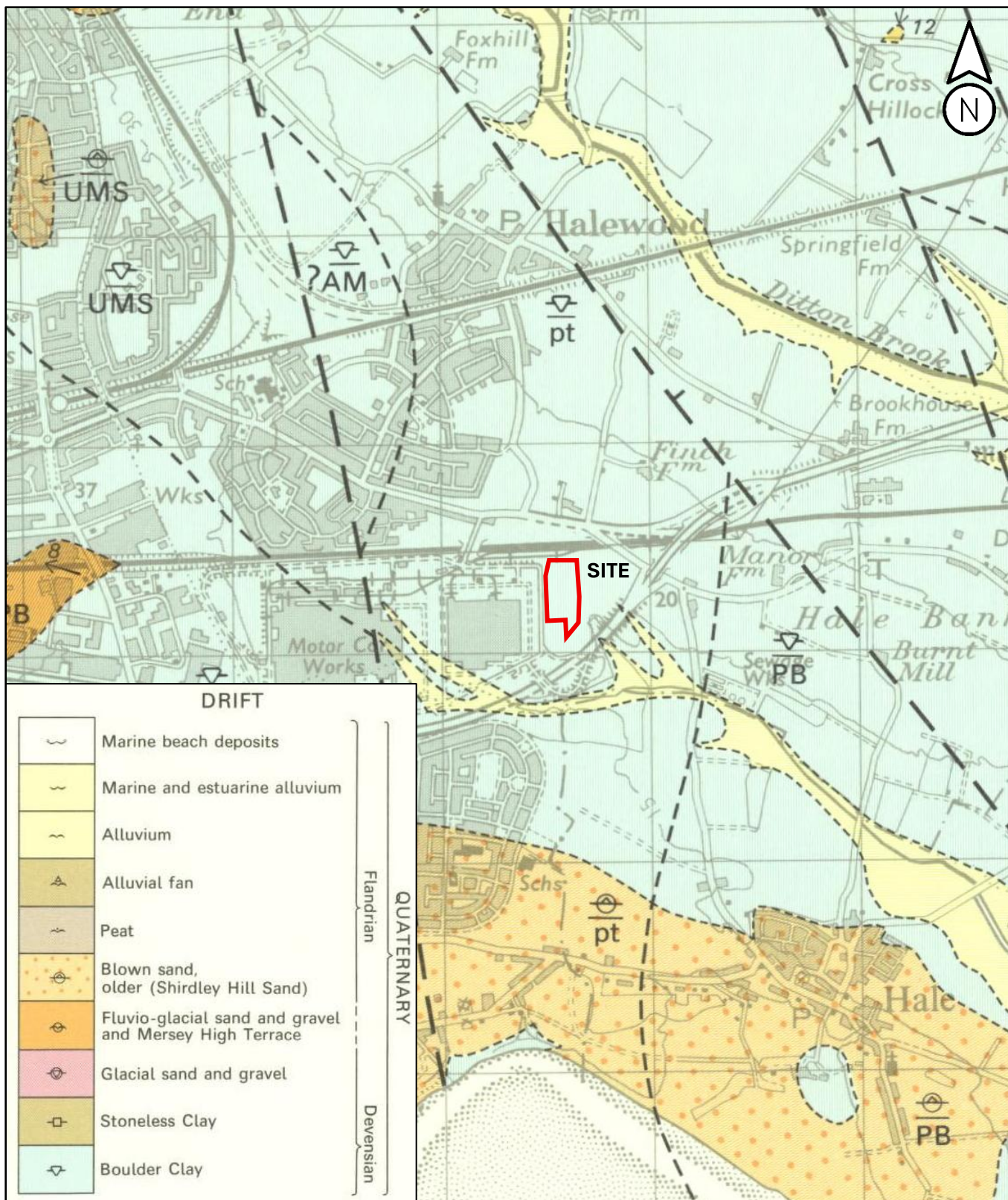
- 5.3.4 There were no publicly available boreholes within 500 m of the site. Historic BGS borehole SJ48SW13, approximately 670 m west of the site, and within the same geological unit, recorded fine to medium grained red sandstone from rockhead at 35.60 mbgl to 98.00 mbgl, further underlain by cycles of finer and coarser red sandstone to a maximum proven depth of 190.00 mbgl.

5.4 Coal Mining Activities

- 5.4.1 The site is not located within an area of historical mine workings. The Mining Remediation Authority viewer shows the site is wholly located outside of a designated Coal Mining Reporting Area or Development High Risk Area (Appendix A). As such we considered there to be no risk posed to the site by coal mining activities.

5.5 Non-Coal Mining and Quarrying

- 5.5.1 A review of the historical OS maps did not indicate the presence of non-coal mining or quarrying activity within the site. Additionally, there were no BGS recorded mineral sites or non-coal mining areas highlighted in the Envirocheck Report (Appendix B). As such we considered there to be no risk to the site posed by historical non-coal mining or quarrying.

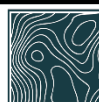


Extract from BGS © - Runcorn Sheet 97

Site: Jaguar Land Rover, Halewood, Eastlands
Ref: LW25-136

Drawing No.

LW25-136/DRG/DS/03



LandWise
 geo-environmental consultants

Title:

Drift Lithology

Scale.

Not to Scale

Drawn

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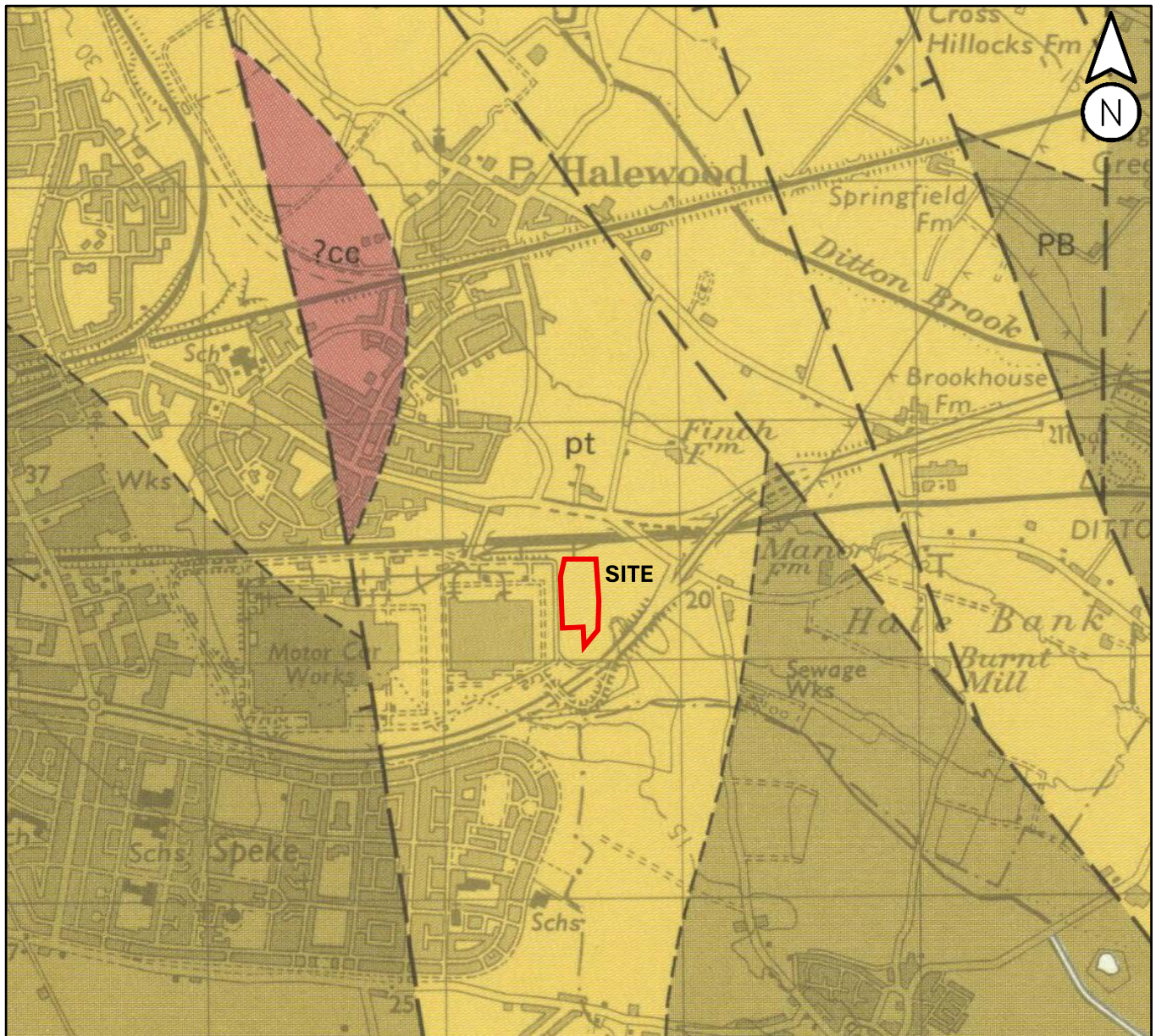
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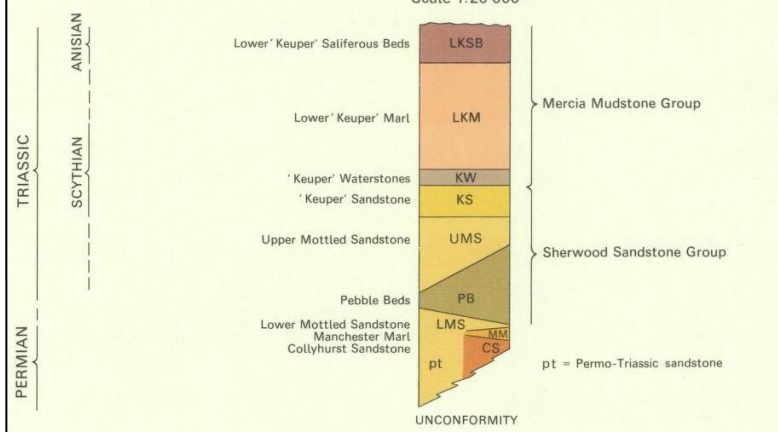
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Date

29/01/26



PERMIAN AND TRIASSIC
Scale 1:20 000



- + Horizontal strata
- ↘ Gently inclined strata
- ↘5 Inclined strata, dip in degrees
- Geological boundary
- Coal crop
- Fault, crossmark on downthrow side
- Termination of fault
- Marine Band
- Mussel Band
- * Fossil locality
- Broken lines denote uncertainty

Extract from BGS © - Runcorn Sheet 97

Site: Jaguar Land Rover, Halewood,
Eastlands
Ref: LW25-136

Drawing No.
LW25-136/DRG/DS/04



LandWise
geo-environmental consultants

Title:
Solid Lithology

Scale.
Not to Scale

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Revision.
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Date
29/01/26

5.6 Hydrology and Hydrogeology

- 5.6.1 Interpretation of the site hydrogeology required consideration of the general geological conditions. In this instance the available information indicates the ground conditions to be comprised of up to three geological units: made ground, glacial till, and sedimentary rock. The typical permeabilities of each of these strata are recorded in Table 09.

Table 09 – Typical Material Permeability

Material	Typical Permeability Range (m/sec)*
Made Ground	Variable**
Glacial Till	10^{-12} to 10^{-6}
Sedimentary Rock	10^{-10} to 10^{-6}

* Ref: Freeze and Cherry (Groundwater – 1979, Table 2.2).

** No permeability range indicated for made ground, however based on our experience, the make-up of made ground is often variable.

- 5.6.2 At present, there is a mixture of both hard and soft surface cover. Most areas of the site are surfaced with either tarmac, gravel or concrete hard standing. In these areas we anticipate that infiltration would be low. In areas surfaced with rough vegetation or we anticipate that infiltration would be low to moderate.
- 5.6.3 During the site walkover survey it was noted that there were significant areas of the site with standing water or saturated ground. As such, we considered there to be limited potential for both infiltration and runoff.
- 5.6.4 The closest water feature, the Ram's Brook, approximately 58 m southeast of the site was not classified by the Environment Agency. The nearest classified surface water body was the Mersey Estuary, approximately 1.90 km south of the site, classified as having 'moderate ecological status' in 2022.
- 5.6.5 The DEFRA Magic Map indicates the presence of an undifferentiated secondary aquifer within the superficial deposits and a principle bedrock aquifer the Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers Water Body (ID: GB41201G101700) which was classified by the Environment Agency as having an overall 'poor' in 2019.
- 5.6.6 We considered both the Ram's Brook and the underlying Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifer to be potential sensitive receptors.

6.0 CONCEPTUAL SITE MODEL

6.1 General

6.1.1 In order to fully evaluate the potential presence and impact of contamination at the site, the area must be considered in an environmental context taking account of its geology, topography, past and present land-use. From this review, the current guidance requires the development of a 'Conceptual Site Model' as defined in the R & D Publication CLR10 published by the Department for the Environment and Rural Affairs (DEFRA). The model then forms an integral part of the contamination assessment for the proposed development site, looking at conventional source-pathway-receptor linkages.

6.1.2 The key parameters of the model are the conjectured ground conditions at the site, the potential sources of contamination, migration pathways and possible receptors in the vicinity. During the initial stages of the investigation, a preliminary conceptual model can be developed using information obtained during the desk study phase, prior to site investigations being carried out. This should then be revised during a subsequent phase of investigation.

6.2 Environmental Qualitative Risk Assessment

6.2.1 Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) has created a new regime for the identification and remediation of contaminated land. A revised Statutory Guidance Edition 2 (Paper SE/2006/44) to the Act was published by the Scottish Executive in May 2006.

6.2.2 Both Part IIA and the planning regulations it impacts on, embrace the "suitable for use" approach, with remedial actions only required where there are unacceptable risks to health or the environment, taking into account the current and proposed land uses and its environmental setting.

6.2.3 It is based on the principles of risk assessment, including the concept of a *pollutant linkage* between a *source* contaminant and a *receptor*, by means of a *pathway*. We would highlight that the approach, while perhaps rendering the site suitable for its current use, may prove inappropriate to a change in site designation or specific land use, arising from existing site conditions.

6.2.4 The presence of all three elements identifies a plausible pollutant linkage. An assessment of the potential sources, pathways and receptors constitutes a conceptual model for the site.

6.3 Receptor Characterisation

6.3.1 Potential receptors at the site are defined on the basis of the site proposals, which are understood to include the construction of a development platform suitable for car parking and the relocation of bunded soil material. The location of the site relative to any off-site receptors has also been considered. The following receptors are considered relevant to this project:

- Humans – site end users and construction workers (outdoor),
- Flora and fauna,
- Structures and services,
- Water Environment (surface water and superficial and deep bedrock groundwaters)

6.4 Source Characterisation

6.4.1 The potential on-site sources of contamination identified by this desk study are:

- Deposition of contaminated fill materials within the indicated landfill including asbestos impacted soils.
- Leaks or spills of fuel or chemicals associated with use of the site for parking, storage or industrial activities associated with the motor works.

6.4.2 The potential off-site sources of contamination identified by this desk study are:

- Deposition of contaminated materials associated with made ground soils in wider area

6.4.3 The following table summarises the typical contaminants which we would anticipate at the site, although any testing schedule should be developed in cognisance of the materials encountered.

Table 10 – Contaminants of Concern

The Site	Industrial Activity/ Site Use	Potential Pathways	Associated Potential Contaminants
CURRENT	Car parking, storage.	Deposition of waste materials associated with development. Spillages and leakages of contaminants.	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Phenol Asbestos
PREVIOUS	Use as landfill associated with motor works. Potential industrial activities. Use as an HGV trailer yard.	Deposition of waste materials associated with the motor works. Spillages and leakages of contaminants.	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Phenol Asbestos
Immediate Surrounding area	Industrial Activity/ Site Use	Potential Pathways	Associated Potential Contaminants
CURRENT	Motor works to the west. Logistics yard to the south. Developments in the wider area including residential and roadways.	Deposition of waste materials during development works. Spillages and leakages of contaminants.	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Phenol Asbestos
PREVIOUS	Motor works to the west. Developments in the wider area including residential and roadways.	Deposition of waste materials during development works. Importation of contaminated material during use as landfill. Spillages and leakages of contaminants.	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Phenol Asbestos

6.5 Pathway Characterisation (Pollutant Linkages)

6.5.1 The pathways by which sensitive receptors may be exposed to potential sources of contamination, as determined by the proposed end use for the site are as follows.

1. Humans – site end users and construction or maintenance workers (outdoor)
 - Dermal (skin) contact with contaminated soil, fugitive dust and the absorption of any contaminants through the skin into the body.
 - Inhalation of fugitive soil dust or vapour.
 - Ingestion of soil by hand to mouth activity.
2. Structures
 - Contact with aggressive or acidic soils will affect the design classification of concrete.
3. Services
 - Direct contact with contaminated soil or groundwater.
 - Service trenches acting as preferential migration pathways for contamination.
 - Permeation of plastic water supply pipes.

4. Water Environment

- Leaching of contaminants from the soil to groundwater.
- Contaminant migration beyond the site boundary.

5. Vegetation

- Uptake of contamination in plant roots.
- Direct contact with contaminated soil or groundwater.

6.6 Conceptual Site Model

6.6.1 Based on our desk study researches and a review of the potential source-pathway-receptor linkages, we have devised a conceptual site model (CSM) for the site. Table 10 below summarises our consideration of risk in relation to a number of potential environmental areas of concern.

Table 11 – Summary of Environmental Risk

Areas of Concern	Risk	Comment
Human Health	Moderate	Based on site history, there is potential for significant made ground including landfill deposits which may contain contaminants associated with the motor works site including asbestos ACMs and fibres
Vegetation	Moderate	Based on the site history there is potential for phytotoxic contamination within the anticipated made ground soils.
Surface Water Environment	Moderate	We considered that there is a potential of contaminant migration from on-site soils to Controlled Waters.
Groundwater Environment	Moderate	We considered that there is a potential of contaminant migration from on-site soils to the Principal Aquifer.
Ground Gas	Not Applicable	The anticipated made ground deposits are a potential source of ground gas generation. However, the nature of the proposed development is such that there would be no end-use receptor. <i>Notwithstanding, we would note any excavations requiring manned entry at depths beyond 1.20 m should be treated as confined spaces and appropriate health and safety precautions taken with respect to ground gas and/or anoxic conditions.</i>
Radon Gas	Not Applicable	The site is within an elevated radon area where 1-3% of properties may be affected. However, the nature of the proposed development is such that there would be no receptor.
Mine Gas	None	There was no evidence of historical mining within a potential impact distance of the site.
Hydrocarbon Vapour	Not Applicable	Hydrocarbon vapours from made ground and historical landfill are possible. However, the nature of the proposed development is such that there would be no receptor.
Buried Environment	Moderate	Based on the developmental history of the site, there is a potential risk to the buried environment (concrete and water supply) from contamination within made ground soils. We note that this may not be applicable to the proposed development.

6.6.2 On the basis of the above, a qualitative risk assessment is described in Table 12 overleaf and the potential source-pathway-receptor relationships identified at the site, based on the preliminary qualitative risk assessment, are summarised in Drawing No. LW25/136/DRG/DS/06 - Preliminary Conceptual Site Model (CSM).

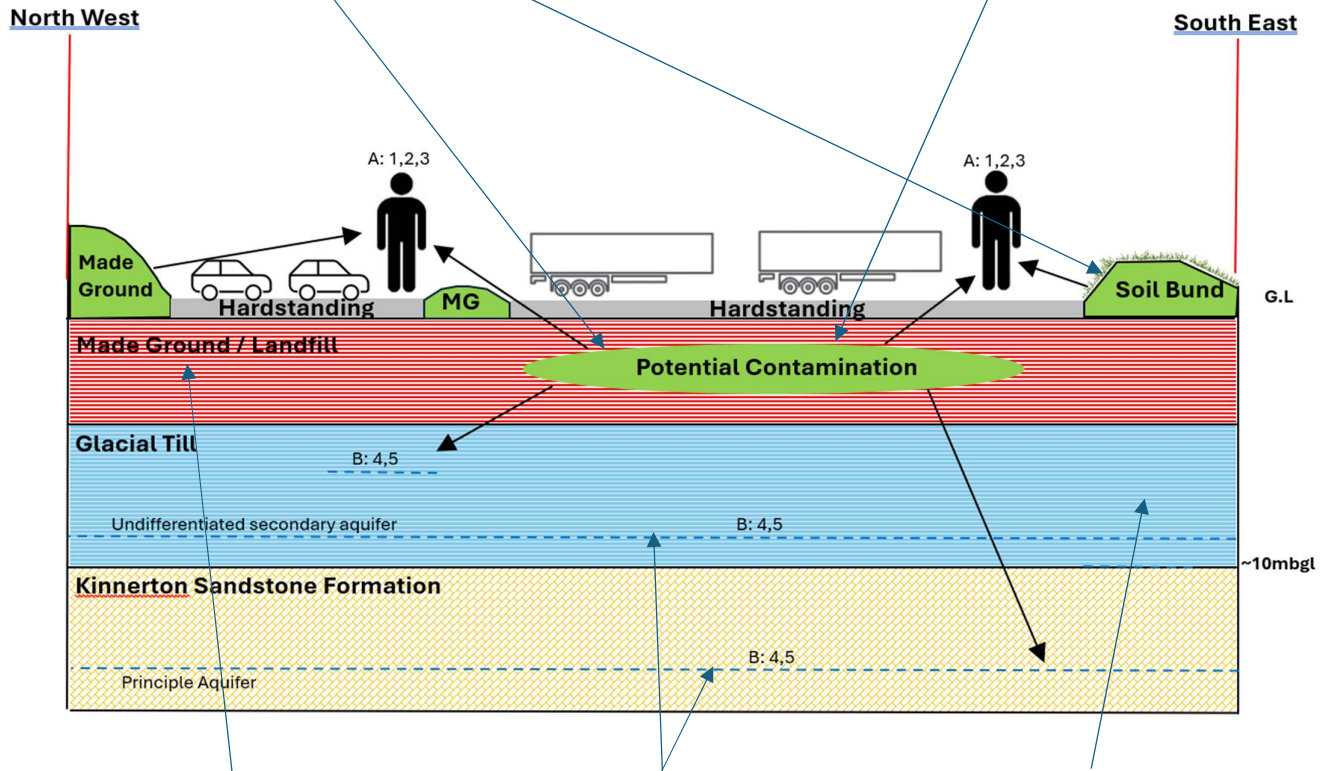
Table 12 – Preliminary Qualitative Risk Assessment – On Site

Source	COCs	Pathway	Receptors (s)	Assessment	Further Investigation Required
On site: Contaminated soils Deposited waste Leaks/spills Off site: Contaminated soils Leaks/spills	Metals: As, Cd, Cr, Ni, Zn, Cu, Hg, Pb Organics: Fuel oils, PAH, Phenol Asbestos	Dermal contact, ingestion, inhalation	Human – site workers	Made ground materials have been deposited within the site associated with previous and surrounding development	Yes
			Humans – end users (outdoor)		
		Leaching through soil or direct migration	The water environment - groundwater	Contaminants may be leached and potentially mobilised from the soil by the infiltration of rainwater and possibly by shallow groundwater movement.	Yes
		Direct contact, leaching through soil, groundwater migration	Structures and services	Potential for aggressive chemical environments for concrete due to sulphate and acidic conditions. Presence of contaminants in soil that may permeate water supply pipes.	Yes
		Gas/vapour inhalation, vertical/lateral migration	N/A	Contamination may include gas/vapour producing materials or compounds. Given the proposed development, however, no end use receptors are expected.	No
		Migration in the groundwater	The water environment	Contaminated soils/ groundwater within the site could migrate in the groundwater beyond the site boundary.	Yes

A review of soil data from 2016 recorded no contaminant concentrations above the guideline values. Asbestos ACMs and asbestos fibres were however recorded in the made ground soils

Whilst we consider the risk from chemical contamination to be moderate, in respect to asbestos specifically, we consider a high likelihood of encountering further ACMs and asbestos impacted soils (fibres) during any further earthworks

A review of the 2016 water chemical data indicates potentially elevated concentrations of heavy metals, PAH and TPH. As such further assessment is required to assess the risk to the water environment.



The Silkstone Environmental site investigation in 2016 recorded made ground across the development to depths in excess of 3.50mbgl

The DEFRA Magic Map indicates the presence of an undifferentiated secondary aquifer within the superficial deposits and a principle bedrock aquifer the Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers Water Body (ID: GB41201G101700) which was classified by the Environment Agency as having an overall 'poor' in 2019.

The Silkstone Environmental site investigation in 2016 recorded natural sandy gravelly CLAY from depths of between 1.50mbgl and 3.00mbgl in 2 No. trial pits.

Source (Risk)

- Potentially Contaminated Soils

Pathway

- Outdoor ingestion of dust
- Skin contacts with outdoor soil
- Outdoor inhalation of dust
- Leaching of contaminants to the groundwater
- Direct contaminant migration in groundwater

Receptor

- Site users / construction or maintenance workers (Human Health)
- The water environment

Site: Jaguar Land Rover, Halewood, Eastlands
Ref: LW25-136

Drawing No.
LW25-136/DS/05



LandWise
geo-environmental consultants

Title:
Preliminary Conceptual Site Model

Scale.
Not to Scale

Drawn
HOL

Approved
HOL

Revision.
01

Date
21/02/26

7.0 CONCLUSIONS AND RECOMMENDATION ON DEVELOPMENT

7.1 General

- 7.1.1 We have undertaken Phase 1 desk study researches to investigate if there is potential risk that the site is impacted by soil contamination relating to the historical development and use within the site. This would be required to be further evaluation through Phase II investigations, including the testing of soil/water samples, and examining the characterisation of the soils and groundwater beneath the site.

7.2 Current Site Conditions

- 7.2.1 As part of our researches a walkover survey of the site was conducted on the 6th January 2026. Approximately 30% of the site is surfaced by tarmac or concrete hardstanding. Approximately 40% of the site is surfaced by gravel/aggregates. The remaining 30% is surfaced by banded soil stockpiles and rough vegetation. The site is generally noted to be flat lying, having been platformed to create level surfaces for car/trailer parking. There are however areas out with the car/trailer parking where soil bunds/stockpiles are present. These are described below;

- Northern stockpile – this is located within the northernmost site area. The topographic survey indicates this bund to rise approximately 2.50m above the northern car parking area.
- Central stockpile – this is located between the northern car parking area and southern trailer park area. This rises to approximately 1.0m above the northern car parking area and southern trailer park area in the west and approximately 2.0m above the northern car parking area and southern trailer park area in the east.
- Eastern Bund – this is located to the east of the trailer park and is indicated to rise to a level of 3.0m above the trailer park. The volume of material in this bund is estimated to be approximately 8,660m³.
- South Eastern Bund – This is located to the south east of the trailer park. We do not hold topographic survey information for this bund but understand that the volume is estimated at approximately 3,000m³.

- 7.2.2 During the site walkover standing water or waterlogged ground was noted sporadically in the southern site area (on depressions within the gravel hard standing) and in the east of the northern site area.

- 7.2.3 During our walkover survey it was noted that the site was no longer in use for car parking or trailer storage. The north of the site was being used to store materials associated with construction activities such as scaffolding, Heras fencing, temporary barriers, empty IBCs and stockpiles of gravel and concrete.

7.3 Historical Site Usage

- 7.3.1 At the time of the earliest Ordnance Survey maps dating from 1849 indicate that the site was undeveloped and occupied by farmland and woodland. Since the 1960s the site has been associated with the motor works to the west; the woodland was also cleared around this time. Whilst the use of the site as landfill was not

recorded within the available OS data, we understand that at some point since the 1960s the site was used for this purpose with the associating waste rubble originating from the wider motor works site. By the 1990s a small section on the western site boundary of the southern site area was used as a laydown or storage area. The northern site area was developed for car parking circa 2000. The movement of soils materials to the north of the northern parking area is evident from 2013 until recently. The southern area was developed for trailer parking between 2016 and 2018. The formation of soil bunds to the east and south east of the southern trailer park is associated with the southern trailer park development.

- 7.3.2 The surrounding area was largely agricultural, with sporadic residential developments, until the 1930s when significant residential developments began to appear to the northwest of the site. By the late 1940s there was significant development in the surrounding area associated with Speke to the south of the site. The most significant development in the surrounding area occurred in the early 1960s with the development of the motor works 120-1,300 m to the west of the site, with associated developments such as railway sidings to the north of the site. Since this time there has been additional residential and infrastructural development in the wider area. Most recently between 2006 and 2025 additional developments on the motor works site such as an HGV trailer yard and logistics building to the immediate south of the site.

7.4 **Conjectured Ground Conditions**

- 7.4.1 The Silkstone Environmental site investigation in 2016 recorded made ground across the development to depths in excess of 3.50mbgl. The majority of the made ground soils were described as sandy gravelly clay and sandy gravel with high cobble content of concrete and brick with gravels similarly comprising brick and concrete fragments. Other sub-ordinate extraneous material included glass, plastic, timber, rags, paper, slate, breeze blocks, metal pipes.
- 7.4.2 Although a consistent made ground stratigraphy is difficult to ascertain as the soils are indicated to be heterogeneous, It is noted that the granular content of the soils is indicated to decrease with depth with the common presence of sandy gravel layers within 1.0mbgl and predominantly sandy gravelly clays at greater depths.
- 7.4.3 It is also worth noting that TP21 recorded gravelly sandy ash from surface to a depth of 1.40mbgl and sandy ashy gravel was recorded in TP17 which is inconsistent with the shallow made ground over the remainder of the site. Furthermore, it is also worth noting that a layer of cobbles and boulders was recorded in the deeper made ground in TP22, TP24 and TP32, all of which are located in the south eastern site area. Tar fragments were recorded in TP15 at depth of between 0.30mbgl and 2.50mbgl.
- 7.4.4 In the course of the SEL investigations natural soils were only encountered within trial pits TP01 and TP11, both located in the south west of the trailer park. Soft to stiff sandy gravelly clay were recorded in TP01 from a depth of 1.20mbgl to a depth of >3.40mbgl. Stiff sandy gravelly clay was recorded in TP11 from a depth of 3.00mbgl to a depth of >3.20mbgl.

7.5 Chemical Contamination

- 7.5.1 Silkstone Environmental concluded that all contaminant concentrations recorded fell below the open space land use guideline values utilised in their 2016 assessment. LandWise Consulting have undertaken a review of the historical chemical data comparing the recorded concentrations at the time to S4UL guideline values appropriate for a commercial end use which indicates no contaminant concentrations to be recorded above the guideline values.
- 7.5.2 Silkstone Environmental recorded possible asbestos sheeting within the shallow made ground soils of TP24 to a depth of 0.70mbgl. Asbestos was recorded in 2 No samples within the subject site, described as chrysotile loose fibres in TP11 at a depth of 1.10mbgl and chrysotile loose fibres in TP21 at a depth of 0.30mbgl. Arcadis indicated that following the identification of asbestos impacted soils and Asbestos Containing Materials (ACMs) by SEL in March 2016, Santia Asbestos Management Ltd attended site in October 2016 to remove a small number of ACMs from site. A walkover survey in conjunction with partial soil excavation was undertaken by Santia Asbestos Management Ltd on the 10th October 2016. This identified further suspected ACMs, with analysis confirming the presence of asbestos.
- 7.5.3 Whilst we consider the risk from chemical contamination to be moderate, it would be considered prudent to undertake some additional up-to-date risk assessment in line with current guidance to confirm that the site does not pose a chemical contaminant risk. In respect to asbestos specifically, we consider a high likelihood of encountering further ACMs and asbestos impacted soils (fibres) during any further earthworks.
- 7.5.4 In respect to groundwater, SEL undertook a generic groundwater risk assessment comparing the results of 3 No water samples to generic assessment criteria at the time. Despite several heavy metal and Pah concentrations exceeding the guideline values utilised, SEL concluded these elevated concentrations not to be significant when compared to the average site concentration. LandWise Consulting similarly undertook a generic groundwater risk assessment comparing the recorded contaminant concentrations recorded within the groundwater samples to EQS guideline values with respect to the surface water risks assessment and to MRV guideline values with respect to the groundwater risk assessment. Based on the results of the preliminary review (GQRA) it is considered that the site conditions may potentially present a risk to both the Surface Water Environment and the Groundwater Water Environment. However, it is important to note that the preliminary assessment does not take into account the following:
- The requirement for modelling of these concentrations to determine the potential concentrations are the receptors, in this case the Ram's Brook and the underlying Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifer. Further assessment is required following retrieval, testing and modelling of further water samples.
 - The proposed development which includes for hardstanding and enclosed drainage therefore reducing surface water infiltration across the site and subsequently reducing the potential contaminant loading into the shallow groundwater or surface water.
 - The dilution potential of the Rams Brook or indeed the River Mersey.
- 7.5.5 Once all of the above is taken into account we anticipate the overall risk to the groundwater environment to

be low to moderate however further assessment in this respect is required.

7.5.6 The Arcadis remediation method statement and materials management plan provide information on the source of the material within the soil bunds located to the east of the trailer park and the soil bund to the south east of the trailer park. The soil bund to the south east of the trailer park would be formed using ACM contaminated material from the trailer park and that a clean capping of soils would be incorporated. The soil bund to the east of the trailer park which already existed in 2017, which was also considered to contain ACM material would also be capped using imported soil from the North Road car park development.

7.5.7 From review of the reports made available to us, we understand that the make up of the soil bund the south east of the trailer park is as follows; bund core comprising of concrete and brick rubble from the trailer park, overlain by potential ACM containing soils, overlain by an orange geotextile, overlain by 400mm clean topsoil. We understand that the make up of the soil bund the east of the trailer park, which was already present in 2017, comprises of potential ACM containing soils, overlain by an orange geotextile, overlain by 400mm clean topsoil.

7.6 Gas Emissions

7.6.1 Our research suggests that the site is within a 1-3% radon risk area and the ground conditions would suggest that there is a low to moderate ground gas generation potential (associated with historical rubble landfill associated with the wider motor works site and likely made ground deposits). With respect to hydrocarbon vapour generation, given the historical site usage hydrocarbon contaminants may be present within the made ground materials.

7.6.2 Notwithstanding the above, it is noted that the development proposals include for new car parking only with no proposals for enclosed or habitable spaces (i.e. new buildings). As such, it is considered that the potential for ground gas/vapour generation within the expected underlying ground conditions would have no material impact on site end users. Therefore, it is concluded that no further investigations will be required with respect to gas/vapour generation.

7.6.3 It should be noted that if during the course of development/maintenance of the car park manned excavations in excess of 1.20 m are required, it is our recommendation that these be treated as confined spaces and appropriate health and safety proposals put in place.

7.6.4 If the development proposals change to include for enclosed spaces (indoor air) LandWise should be contacted to ensure the pertinence of our recommendations.

7.7 Foundations and Pavements

7.7.1 Significant foundations are not envisioned as part of the development proposals. Our researches indicate that widespread made ground / landfill deposits of significant thickness exist across the site. Due to the

heterogeneous nature of made ground deposits we would not consider these to represent a suitable bearing horizon for building foundations.

7.7.2 Should there be a requirement for foundations at part of the proposed development further investigation would be required to ascertain the present depth to, and condition of, the natural soils to confirm a suitable foundation bearing horizon.

7.7.3 The Silkstone Environmental site investigations were undertaken prior to the development of the trailer park. We anticipate a stone capping of aggregate to be present below the northern car park and southern trailer park areas. It is anticipated that this material currently in-situ would provide a CBR value of >5%. As part of the redevelopment of these areas, it is anticipated that this material would be separated and reused and given the granular content would provide a CBR of >5% with limited compaction. The make up of the car park and trailer park capping/sub-base will be examined as part of future ground investigation proposals.

7.7.4 SEL did not undertake geotechnical analyses of the fill material across the site however analyses on the natural cohesive material recorded moisture contents of between 12% and 17%. Atterberg limit testing indicated the natural soils to have a low plasticity. The soils were recorded to have a maximum dry density of between 1.88Mg/m and 2.09Mg/m with an optimum moisture content of between 9% and 15%. Compaction testing indicated a CBR of between 23.8% and 42.4% using a 4.5kg rammer and 6.5% and 12.2% using a 2.5kg rammer.

7.8 Flood Risk

7.8.1 The BGS flood data indicates that there is limited potential for groundwater flooding to occur. The Environment Agency flood map shows localised areas of the site are at risk from surface water flooding including high risk areas (more than 3.3% annual chance) areas in the south and east of the HGV storage yard in the southern site area. No risk was indicated from river or sea flooding.

7.9 Mining and Quarrying

7.9.1 No mining or quarrying activities were noted within likely impact distance of the site during our researches. As such we considered that there would be no constraints to the site from mineral instability or mine gasses.

7.10.1 Development Considerations

7.10.1 A number of development geo-environmental considerations could arise from the recommended Phase II investigations. These could include:

- Remediation of contaminated land.
- Capping and subbase designs to be determined by the nature of the existing soil conditions.
- Foundation design (if required) will be determined by the thickness of made ground / landfill deposits and the condition of the underlying natural soils.
- Drainage design contingent on results of soakaway testing.

7.10.2 We highlight that these considerations are speculative without the more detailed information that would arise following Phase II investigations, following which the impact of each should be re-assessed. The advised scope of these investigations, provided by the client and informed by this risk assessment, include:

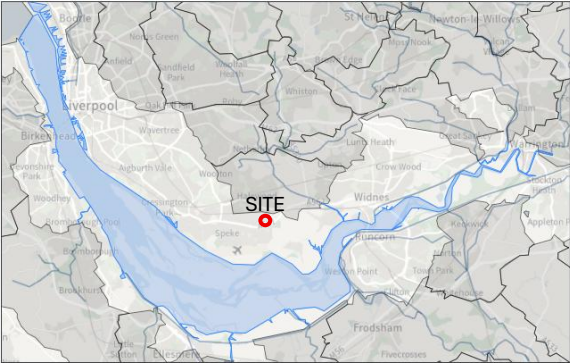
- 25 No. shallow soil bores to a maximum depth of 5.00 m.
- 15 No. mechanically excavated trial pits to approximately 3.00 m using a JCB 3CX or equivalent.
- Installation of 10 No. groundwater monitoring wells.
- 20 No. dynamic cone penetrometer (DCP) tests to predict California Bearing Ratio (CBR) of the existing shallow soils.
- 4 No. soakaway testing locations in line with BRE Digest 365
- 1 No. groundwater monitoring and sampling return visit.
- Chemical testing in order to allow assessment of the risks to human health, vegetation, the built environment and the water environment.
- Submission of selected soil samples for laboratory based geotechnical testing to determine the engineering parameters of the shallow soils.
- Phase II Geo-Environmental Investigation Report detailing work carried out, findings, recommendations and outline remedial options.

We trust that this will meet your current requirements. However, should you require any further information, please do not hesitate to contact the undersigned.

Hugh O Leary
Director

Appendix A
Review of Publicly Available Information

MERSEY Water Body Moderate ecological status



Get MERSEY data

- [Download water body \(Shapefile\)](#)
- [Download water body \(GeoJSON\)](#)
- [Download classifications \(CSV\)](#)
- [Download site classifications \(CSV\)](#)
- [Download investigations \(CSV\)](#)
- [Download challenges \(CSV\)](#)
- [Download objectives \(CSV\)](#)
- [Download protected areas \(CSV\)](#)

Related links

- [Plan maps on ArcGIS online](#)
- [Flood risk management plans](#)

Attributes

Water Body ID GB531206908100	Water Body Type Transitional Water	Hydromorphological designation heavily modified	NGR SJ4588380424
Surveillance Water Body No	Surface area 81.791 km2	Surface area 8179.061 ha	

Classifications

Time period: Cycle 3 ▼

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Invertebrates	Moderate	Moderate
Infaunal Quality Index	Moderate	Moderate
Macroalgae	High	High
Opportunistic Macroalgae	High	High
Phytoplankton	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Dissolved Inorganic Nitrogen	Moderate	Moderate
Dissolved oxygen	Good	Good
Hydromorphological Supporting Elements	Not high	Not high
Hydrological Regime	Supports good	Supports good
Supporting elements (Surface Water)	Moderate	Moderate
Mitigation Measures Assessment	Moderate or less	Moderate or less
Specific pollutants	Moderate	Moderate
2,4-dichlorophenol	High	High
2,4-dichlorophenoxyacetic acid	High	High
Arsenic	High	High
Chlorothalonil	High	High
Chromium (VI)	High	High
Copper	High	High
Diazinon	High	High
Dimethoate	High	High
Iron	High	High
Linuron	High	High
Mecoprop	High	High
Pendimethalin	High	High
Permethrin	High	High
Phenol	High	High
Toluene	High	High
Triclosan	High	High
Zinc	Moderate	Moderate

LW25-136 – Jaguar Land Rover, Halewood, Eastlands

Publicly Available Information – Environment Agency Catchment Data Explorer

Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Anthracene	Good	
Benzo(a)pyrene	Good	
Benzo(b)fluoranthene	Fail	
Benzo(g-h-i)perylene	Fail	
Benzo(k)fluoranthene	Good	
Cadmium and Its Compounds	Good	
Di(2-ethylhexyl)phthalate (Priority hazardous)	Good	
Dioxins and dioxin-like compounds	Good	
Endosulfan	Good	
Heptachlor and cis-Heptachlor epoxide	Fail	
Hexabromocyclododecane (HBCDD)	Good	
Hexachlorobenzene	Good	
Hexachlorobutadiene	Good	
Hexachlorocyclohexane	Good	
Mercury and Its Compounds	Fail	
Nonylphenol	Good	
Pentachlorobenzene	Good	
Perfluorooctane sulphonate (PFOS)	Good	
Polybrominated diphenyl ethers (PBDE)	Fail	
Quinoxifen	Good	
Tributyltin Compounds	Good	
Trifluralin (Priority hazardous)	Good	
Priority substances	Fail	Does not require assessment
1,2-dichloroethane	Good	
Aceniflen	Good	
Alachlor	Good	
Atrazine	Good	
Benzene	Good	
Bifenox	Good	
Chlorfenvinphos	Good	
Chlorpyrifos	Good	
Cybutryne	Good	
Dichloromethane	Good	
Dichlorvos (Priority)	Fail	
Diuron	Good	
Fluoranthene	Good	
Isoproturon	Good	
Lead and Its Compounds	Good	
Napthalene	Good	
Nickel and Its Compounds	Good	
Octylphenol	Good	
Pentachlorophenol	Good	
Simazine	Good	
Terbutryn	Good	
Trichlorobenzenes	Good	
Trichloromethane	Good	

LW25-136 – Jaguar Land Rover, Halewood, Eastlands

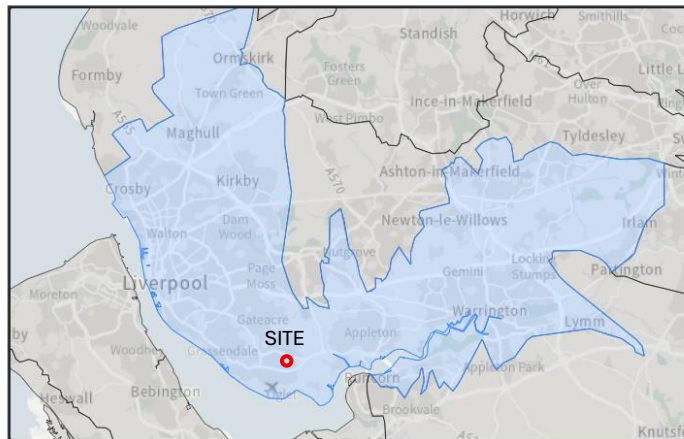
Publicly Available Information – Environment Agency Catchment Data Explorer

Trichloromethane	Good	
Other Pollutants	Good	Does not require assessment
Aldrin, Dieldrin, Endrin & Isodrin	Good	
Carbon Tetrachloride	Good	
DDT Total	Good	
Tetrachloroethylene	Good	
Trichloroethylene	Good	
para - para DDT	Good	

[Home](#) / [North West](#) / [North West GW](#) / [Mersey Basin Lower and Merseyside North Permo-Triassic Sandstone Aqu](#)
/ Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers

Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers Water Body

Poor overall status



Get Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers data

[Download water body \(Shapefile\)](#)
[Download water body \(GeoJSON\)](#)
[Download classifications \(CSV\)](#)
[Download site classifications \(CSV\)](#)
[Download investigations \(CSV\)](#)
[Download challenges \(CSV\)](#)
[Download objectives \(CSV\)](#)
[Download protected areas \(CSV\)](#)

Related links

[Plan maps on ArcGIS online](#)
[Flood risk management plans](#)

LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – Environment Agency Catchment Data Explorer

Attributes

Water Body ID GB41201G101700	Water Body Type Groundwater Body	Hydromorphological designation not applicable	NGR SJ3348491107
Surface area 627.529 km2	Surveillance Water Body No	Groundwater area 62752.864 ha	

Classifications

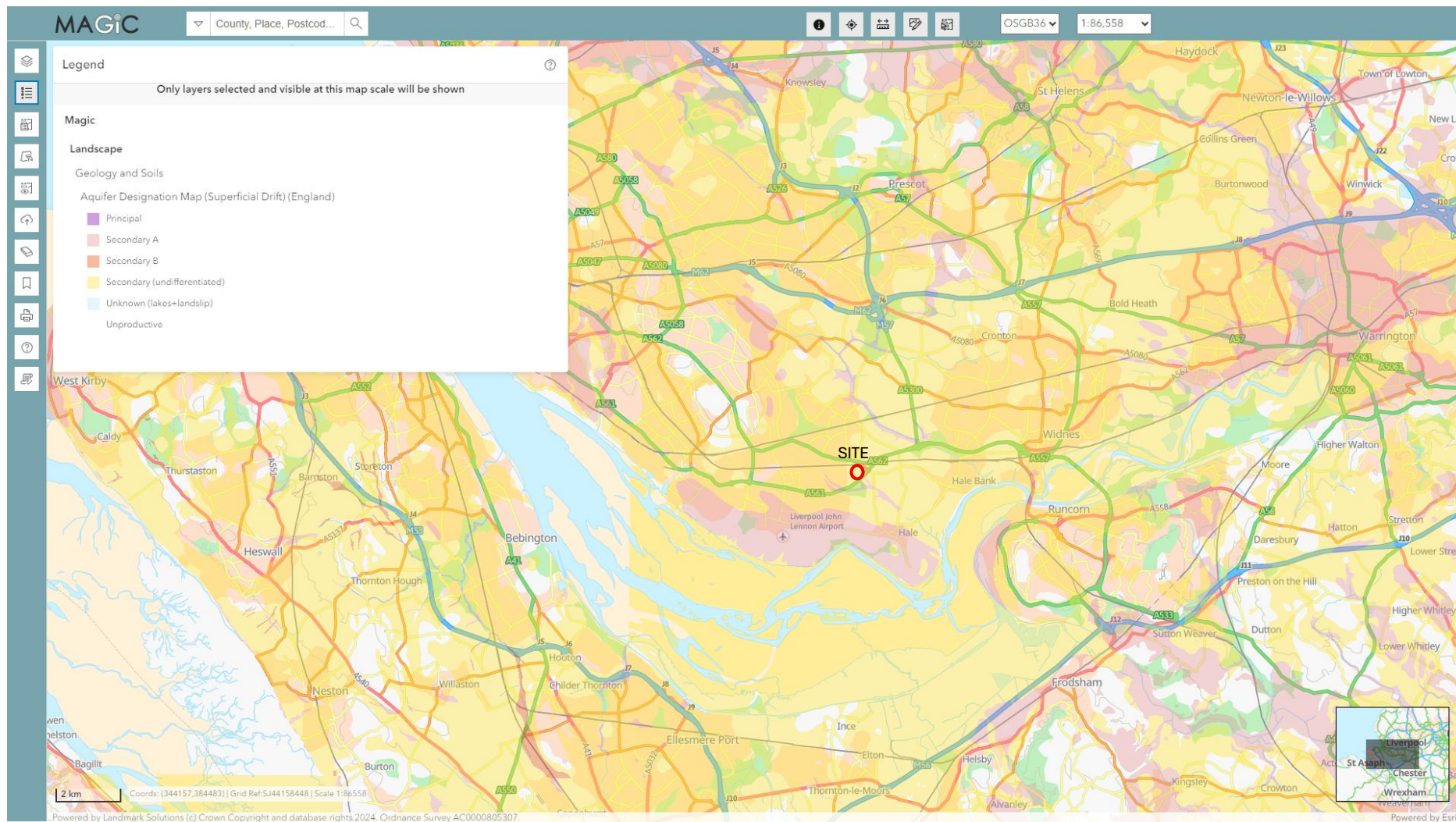
Time period: Cycle 3 ▾

Classification Item	2019
Overall Water Body	Poor
Quantitative	Poor
Quantitative Status element	Poor
Quantitative Dependent Surface Water Body Status	Good
Quantitative GWDTEs test	Good
Quantitative Saline Intrusion	Poor
Quantitative Water Balance	Good
Chemical (GW)	Poor
Chemical Status element	Poor
Chemical Dependent Surface Water Body Status	Poor
Chemical Drinking Water Protected Area	Poor
Chemical GWDTEs test	Good
Chemical Saline Intrusion	Poor
General Chemical Test	Poor
Supporting elements (Groundwater)	
Prevent and Limit Objective	Active
Trend Assessment	Upward trend

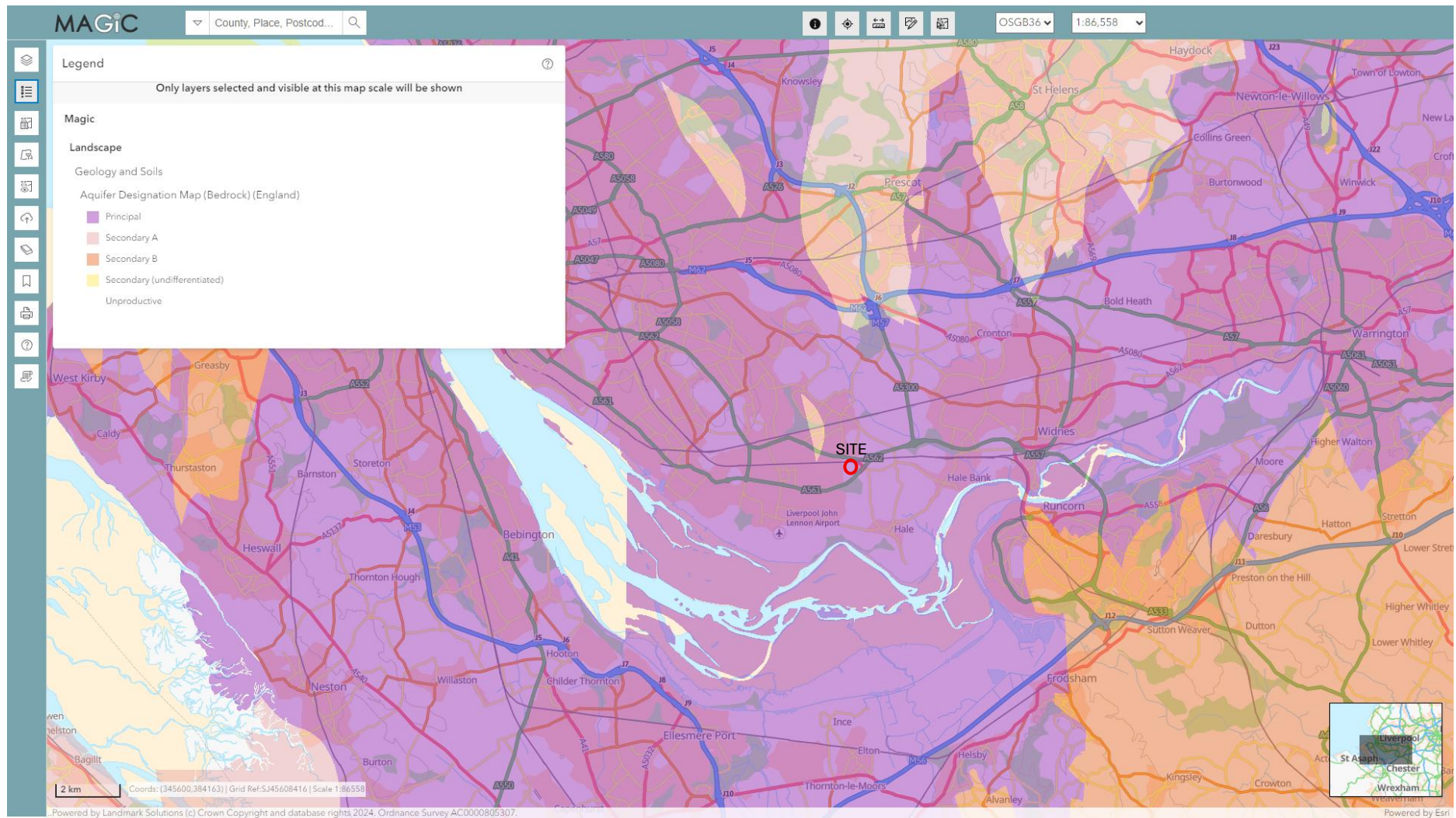
[Why do all water bodies have a chemical status of fail?](#)

Viewing latest data (Updated on 17 March 2025). [Switch to river basin management plan data](#)

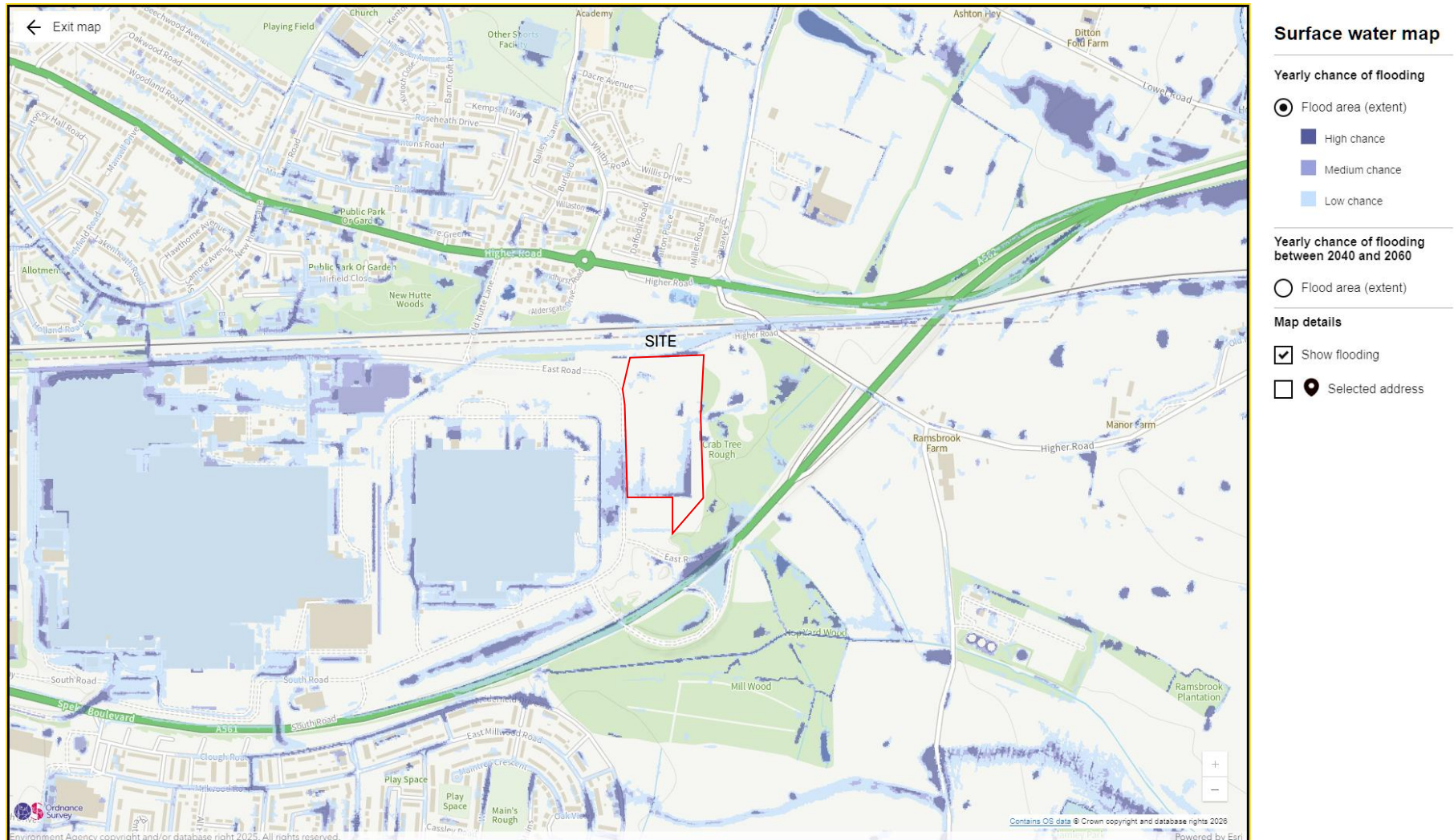
LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – DEFRA Magic Map



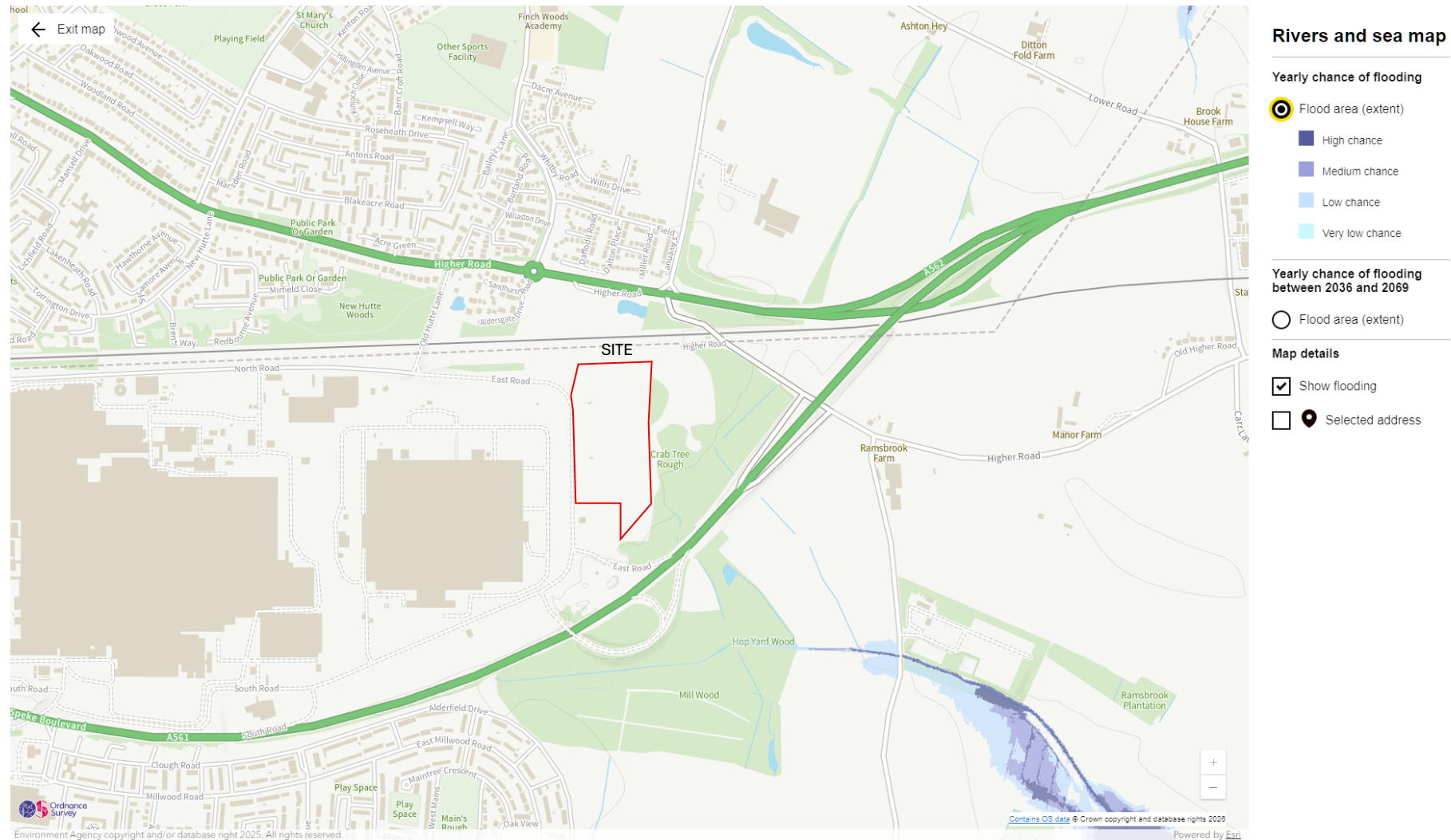
LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – DEFRA Magic Map



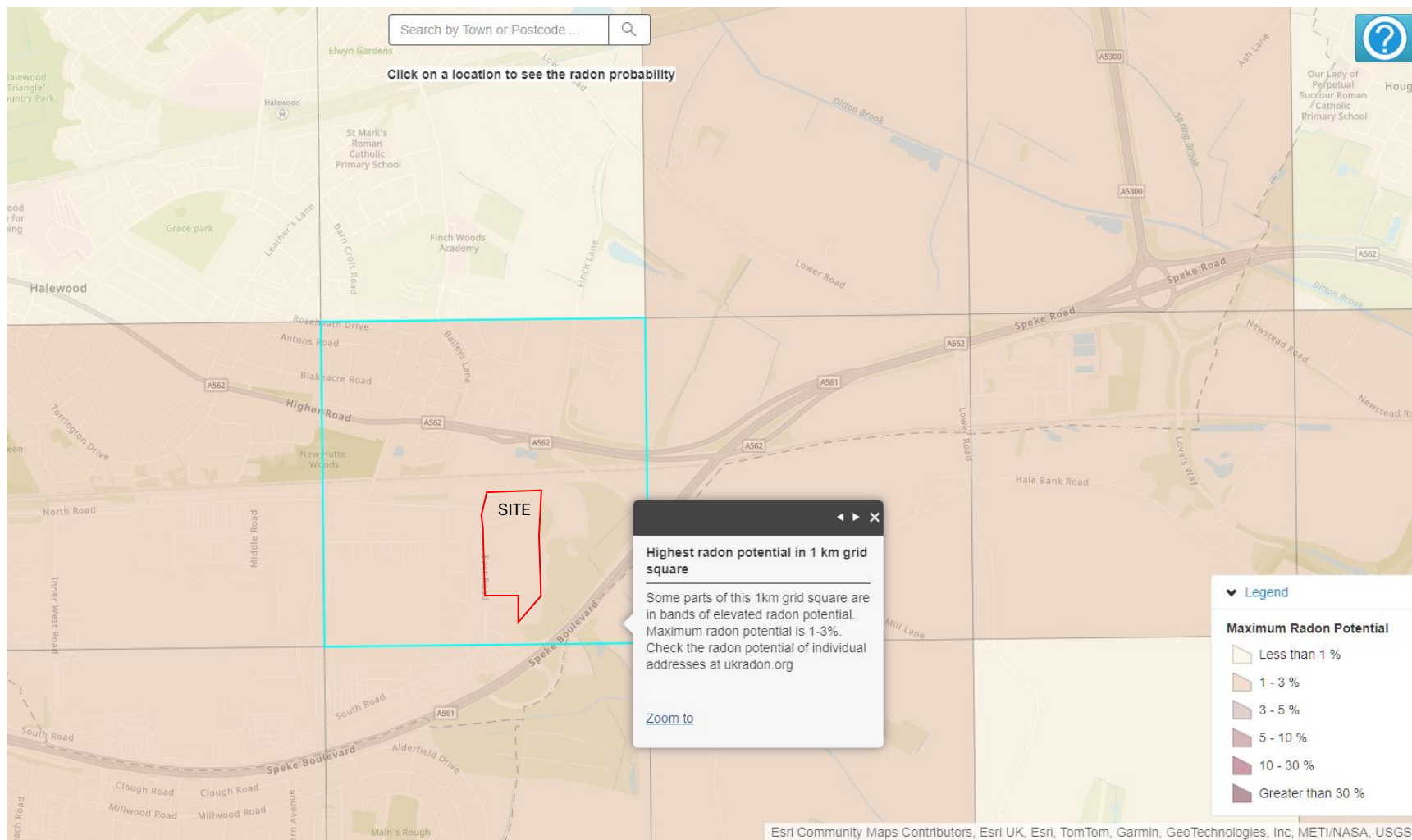
LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – Environment Agency Flood Risk Maps



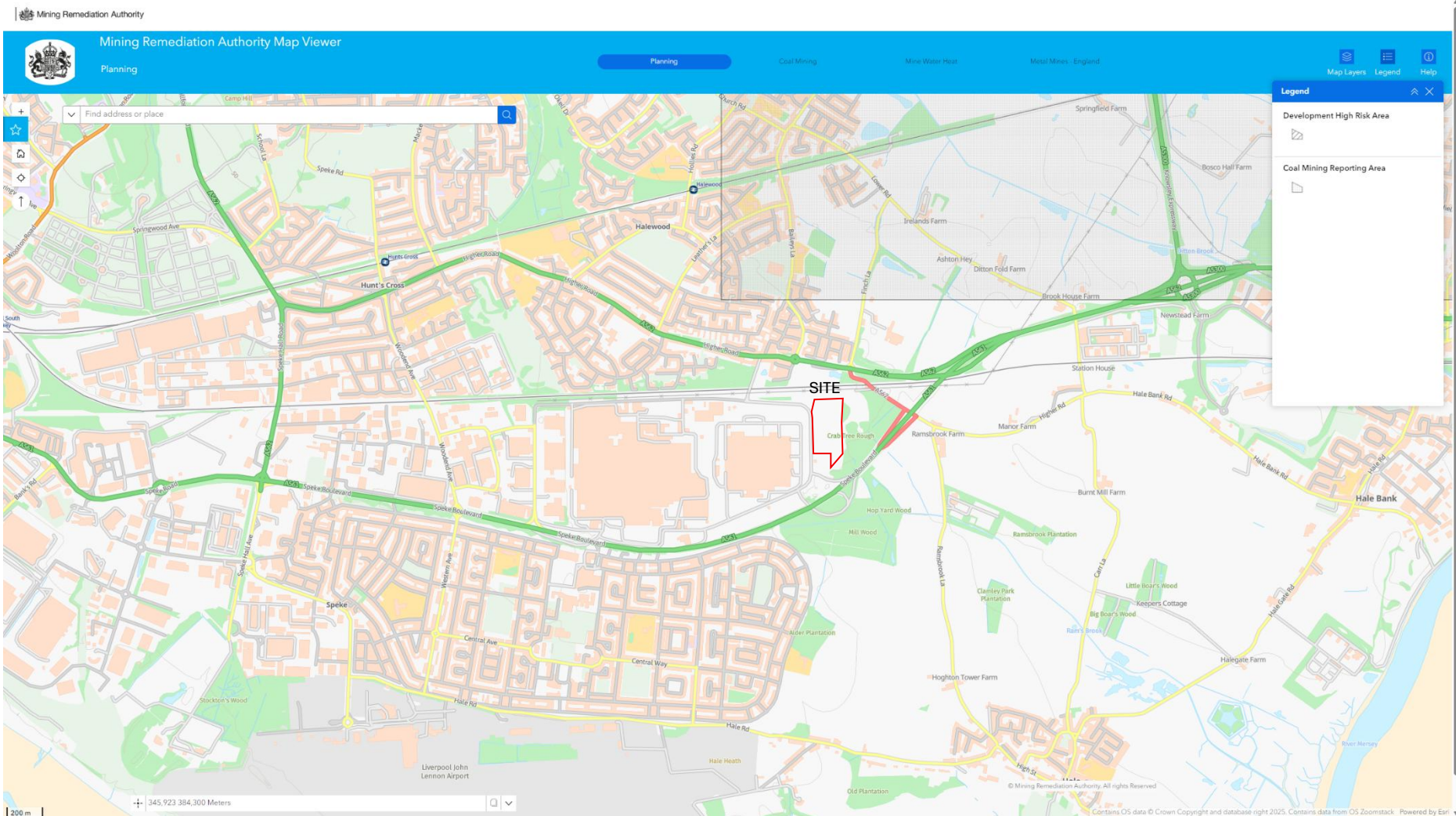
LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – Environment Agency Flood Risk Maps



LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – UK Radon Map



LW25-136 – Jaguar Land Rover, Halewood, Eastlands
Publicly Available Information – Mining Remediation Authority Map Viewer



UNEXPLODED BOMB RISK MAP



SITE LOCATION

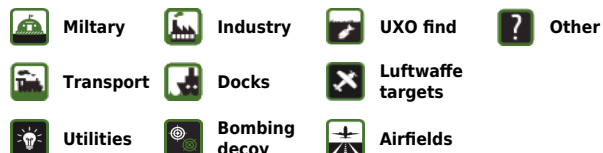
Map Centre: 345578,384298



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

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Appendix B
Envirocheck Report (with Historical Ordnance Survey Maps)

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

393191569_1_1

Customer Reference:

LW25-136

National Grid Reference:

345590, 384270

Slice:

A

Site Area (Ha):

5.46

Search Buffer (m):

1000

Site Details:

Jaguar Land Rover, Halewood

Liverpool

L24 9BJ

Client Details:

Mr O'Leary

Landwise Consulting Ltd

43 Buchanan Drive

Cambuslang

GLASGOW

G72 8BD

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	44
Hazardous Substances	49
Geological	50
Industrial Land Use	53
Sensitive Land Use	59
Data Currency	60
Data Suppliers	66
Useful Contacts	67

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England. The probability result is only valid for properties above ground. All basement and cellar areas are considered to be at additional risk from high radon levels. If an underground room such as a cellar or basement makes up part of the living or working accommodation, the property should be tested regardless of Radon Affected Area status.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes		Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				2
Prosecutions					
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 1			1	1
Local Authority Integrated Pollution Prevention And Control	pg 2				1
Local Authority Pollution Prevention and Controls	pg 2				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2		Yes		
Pollution Incidents to Controlled Waters	pg 2			18	10
Historical Prosecutions					
Registered Radioactive Substances					
Substantiated Pollution Incident Register	pg 7		1		
Water Abstractions	pg 7				5 (*98)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 32	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 32	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 32	Yes	n/a	n/a	n/a
Source Protection Zones	pg 33	1			
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 33		14	25	47
Water Framework Directive - Catchment	pg 42	Yes			
Water Framework Directive - Groundwater	pg 43	Yes			
Water Framework Directive - Surface Waters					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 44	1			
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 44				2
Local Authority Landfill Coverage	pg 44	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 44	1	1		
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)	pg 45	1	2	16	38
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 48				1
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents	pg 49			1	
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 50	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 50	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 52	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 52		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 52	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 52	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 52	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 53			7	6
Fuel Station Entries					
Points of Interest - Commercial Services	pg 54				1
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 54			12	23
Points of Interest - Public Infrastructure	pg 57			6	5
Points of Interest - Recreational and Environmental	pg 58				5
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 59		1		
Areas of Adopted Green Belt	pg 59		2	1	
Areas of Unadopted Green Belt	pg 59		1	1	
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 59		1		
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 59		1		
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (SW)	0	1	345595 384269
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	500	1	345000 384269
1	Discharge Consents Operator: The Everton Football Club Company Limited Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Everton Fc Training Centre Finch Farm, Finch Lane, Halewood, Merseyside, L26 3ue Authority: Environment Agency, North West Region Catchment Area: Ditton Brook Reference: 016993664 Permit Version: 2 Effective Date: 1st April 2007 Issued Date: 13th February 2007 Revocation Date: Not Supplied Discharge Type: Sewage And Trade Combined - Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Trib Of Ditton Brook Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A23SE (N)	865	2	345900 385280
1	Discharge Consents Operator: The Everton Football Club Company Limited Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Everton Fc Training Centre Finch Farm, Finch Lane, Halewood, Merseyside, L26 3ue Authority: Environment Agency, North West Region Catchment Area: Ditton Brook Reference: 016993664 Permit Version: 1 Effective Date: 1st April 2006 Issued Date: 22nd December 2004 Revocation Date: 31st March 2007 Discharge Type: Sewage And Trade Combined - Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Trib Of Ditton Brook Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A23SE (N)	865	2	345900 385280
2	Integrated Pollution Prevention And Control Name: Gft Energy Centre Ltd Location: Getrag Ford Energy Centre, Speke Boulevard, Getrag Ford Energy Centre, Speke Boulevard, Halewood,,, Liverpool, Sefton Council, L249LE Authority: Environment Agency, North West Region Permit Reference: WE7793AA Original Permit Ref: We7793aa Effective Date: 7th October 2021 Status: Effective Application Type: Not Supplied App. Sub Type: Not Supplied Positional Accuracy: Located by supplier to within 10m Activity Code: AR1 Activity Description: MCP Primary Activity: Y	A12NE (W)	456	2	345048 384284
3	Integrated Pollution Prevention And Control Name: Jaguar Land Rover Limited Location: Halewood Combustion Plant Epr/Bs5673iq, Jaguar Land Rover Limited,Halewood Combustion Plant Epr/Bs5673iq, Speke Boulevard,,, Halewood, West Midlands, L24 9BJ Authority: Environment Agency, North West Region Permit Reference: BS5673IQ Original Permit Ref: Bs5673iq Effective Date: 8th January 2025 Status: Effective Application Type: Variation (Normal) App. Sub Type: Not Supplied Positional Accuracy: Automatically positioned to the address Activity Code: AR2 Activity Description: Directly Associated Activity (Included) Primary Activity: N Activity Code: AR1 Activity Description: Combustion; Any Fuel Greater Or Equal To 50Mw Primary Activity: Y	A11SE (W)	969	2	344540 384050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Local Authority Integrated Pollution Prevention And Control Name: Jaguar Cars Ltd Location: Speke Boulevard, HALEWOOD, L24 9LE Authority: Knowsley Metropolitan Borough Council, Environmental Health and Consumer Protection Division Permit Reference: A2/0703/6.4/1 Dated: 18th August 2005 Process Type: Other Activities Description: SG6 Status: Permit Issued Positional Accuracy: Located by supplier to within 100m	A12SW (W)	905	3	344600 384100
5	Local Authority Pollution Prevention and Controls Name: Jaguar Cars Ltd Location: South Road, Speke Boulevard, HALEWOOD, Merseyside, L24 9LE Authority: Knowsley Metropolitan Borough Council, Environmental Health and Consumer Protection Division Permit Reference: A2/0703/6.4/1 Dated: 2nd November 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG6/34 Respraying of road vehicles Status: Transferred to LAIPPC Positional Accuracy: Located by supplier to within 10m	A12SW (W)	905	3	344600 384100
	Nearest Surface Water Feature	A13SE (SE)	58	-	345730 384123
6	Pollution Incidents to Controlled Waters Property Type: Spillage; Accident - Static Site Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Chemicals - Solvents Note: Rams Brook Incident Date: 21st August 1992 Incident Reference: 92440118 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	280	2	345500 383800
6	Pollution Incidents to Controlled Waters Property Type: Spillage; Accident - Static Site Location: Merseyside Authority: Environment Agency, North West Region Pollutant: Not Given Note: Mill Dam Pond; Creosote Incident Date: 16th September 1993 Incident Reference: 93440119 Catchment Area: Alt Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	283	2	345505 383795
6	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Lubricating Note: Rams Brook Incident Date: 5th January 1993 Incident Reference: 93440002 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	285	2	345500 383795
7	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 7th February 1992 Incident Reference: 92440017 Catchment Area: Ditton Brook Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	332	2	345400 383800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Not Given Note: None Pollution Found Incident Date: 5th March 1992 Incident Reference: 92440023 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	336	2	345400 383795
8	Pollution Incidents to Controlled Waters Property Type: Industrial: Other Location: Rams Brook, HALEWOOD Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Oil On Brook Incident Date: 9th July 1998 Incident Reference: SO981247 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	375	2	345500 383700
8	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Near A561, Fords Road Authority: Environment Agency, North West Region Pollutant: Not Given Note: Diesel In Rams Brook Incident Date: 5th August 1998 Incident Reference: SO981404 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	380	2	345500 383695
9	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Industrial Effluent Note: Rams Brook Incident Date: 19th September 1991 Incident Reference: 91440082 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	398	2	345300 383800
9	Pollution Incidents to Controlled Waters Property Type: Pollution Found Source Not Determined Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Ramsbrook; Oil Incident Date: 9th April 1996 Incident Reference: 96740704 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: High Flow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	399	2	345305 383795
9	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Merseyside Authority: Environment Agency, North West Region Pollutant: Not Given Note: No Pollution Found Incident Date: 13th December 1993 Incident Reference: 93440158 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	402	2	345300 383795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Rams Brook Incident Date: 7th October 1992 Incident Reference: 92440132 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	408	2	345800 383700
11	Pollution Incidents to Controlled Waters Property Type: Private Sewage (Non-PLC): Sewerage Systems Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Sewage Debris/Litter Note: Rams Brook Incident Date: 16th October 1995 Incident Reference: 95742547 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Wrong Connection Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	457	2	345200 383800
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Not Given Note: Rams Brook; Unknown Incident Date: 11th March 1993 Incident Reference: 93440041 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	466	2	345305 383705
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Ramsbrook; Contaminated Surface Water Incident Date: 23rd August 1996 Incident Reference: 96741889 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	469	2	345300 383705
12	Pollution Incidents to Controlled Waters Property Type: Pollution Found Source Not Determined Location: Merseyside Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Rams Brook; Unidentified Oil Incident Date: 19th March 1996 Incident Reference: 96740515 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	469	2	345305 383700
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Foam Note: Rams Brook Incident Date: 16th April 1993 Incident Reference: 93440063 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	473	2	345300 383700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Unknown Note: Rams Brook Incident Date: 26th December 1991 Incident Reference: 91440109 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	473	2	345305 383695
12	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Rams Brook Incident Date: 20th August 1993 Incident Reference: 93440108 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	476	2	345300 383695
13	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Other Fuel Oil Note: Not Supplied Incident Date: 17th December 1993 Incident Reference: 93440162 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	522	2	345001 384001
14	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Pond In Mill Wood Incident Date: 20th January 1993 Incident Reference: 93440034 Catchment Area: Ditton Brook Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	545	2	345900 383600
14	Pollution Incidents to Controlled Waters Property Type: Farm Drainage Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Agricultural: Other Note: Tributary Rams Brook Incident Date: 9th August 1992 Incident Reference: 92440109 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	549	2	345900 383595
14	Pollution Incidents to Controlled Waters Property Type: Farm Drainage Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Other Note: Millwoods Pond; Contaminated Field Drain Incident Date: 27th August 1994 Incident Reference: 94741955 Catchment Area: Ditton Brook Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	552	2	345905 383595

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Rubble/Litter Or Solids Note: Rams Brook Incident Date: 11th December 1993 Incident Reference: 93440157 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	614	2	346200 383800
15	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Rams Brook, Halewood Waste Water Treatment Works Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Not Supplied Incident Date: 24th March 1998 Incident Reference: SO980562 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Other Cause Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	617	2	346200 383795
16	Pollution Incidents to Controlled Waters Property Type: Spillage; Accident In Transit Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Rams Brook Incident Date: 11th November 1992 Incident Reference: 92440140 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	671	2	346200 383700
17	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Rams Brook Incident Date: 27th March 1993 Incident Reference: 93440054 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	702	2	346300 383800
18	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Land Locked Pond; Vegetable Oil Incident Date: 17th September 1991 Incident Reference: 91440081 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	855	2	346000 383300
19	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Not Given Note: Pond Near Rams Brook; None Pollution Found Incident Date: 9th September 1991 Incident Reference: 91440072 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	951	2	346300 383400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	Substantiated Pollution Incident Register Authority: Environment Agency - North West Region, South Area Incident Date: 6th October 2005 Incident Reference: 351536 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Sewage Materials: Sludge	A13SE (SE)	243	2	345827 383927
21	Water Abstractions Operator: The Everton Football Club Company Limited Licence Number: 2569028025 Permit Version: 1 Location: Borehole At Everton Football Club Finch Lane Halewood Authority: Environment Agency, North West Region Abstraction: Sports Grounds/Facilities: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Everton Football Club Finch Lane Halewood Authorised Start: 01 March Authorised End: 30 November Permit Start Date: 26th May 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NE (N)	766	2	345890 385180
21	Water Abstractions Operator: The Everton Football Club Company Limited Licence Number: Nw/069/0028/025 Permit Version: 100 Location: Borehole At Everton Football Club Finch Lane Halewood Authority: Environment Agency, North West Region Abstraction: Sports Grounds/Facilities: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Everton Football Club Finch Lane Halewood Authorised Start: 01 March Authorised End: 30 November Permit Start Date: 2nd June 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NE (N)	772	2	345886 385187
22	Water Abstractions Operator: United Utilities Water Ltd Licence Number: 2569029001 Permit Version: 100 Location: Rams Brk, Halewood Wastewater Treatment Works, Merseyside Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Washing/Process Washing Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 109 Yearly Rate (m3): 13638 Details: Land & Premises At Halewood S.T.W., Merseyside Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th June 1987 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	926	2	346500 383700
23	Water Abstractions Operator: B Webb & Son Licence Number: 2569029002 Permit Version: Not Supplied Location: Manor Farm, Within Way, Hale, LIVERPOOL, L24 4AE Authority: Environment Agency, North West Region Abstraction: Transfer Water Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 1920 Yearly Rate (m3): 45500 Details: Add Purpose: Ag Spray Irrigation; Rams Brook; Type: Abstraction; Status: Current Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	975	2	346500 383600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	Water Abstractions Operator: B Webb & Son Licence Number: 2569029002 Permit Version: Not Supplied Location: Manor Farm, Within Way, Hale, LIVERPOOL, L24 4AE Authority: Environment Agency, North West Region Abstraction: Agricultural Spray Irrigation (Summer) & Transfer Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 1920 Yearly Rate (m3): 45500 Details: Add Purpose: Ag Spray Irrigation; Rams Brook; Type: Abstraction; Status: Current Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	977	2	346500 383595
	Water Abstractions Operator: Lower Road Widnes Ltd Licence Number: 2569028001 Permit Version: 106 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Chemicals: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 5th December 2024 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20SE (E)	1519	2	347154 384787
	Water Abstractions Operator: Aurorium Uk Ltd Licence Number: 2569028001 Permit Version: 105 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Chemicals: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 26th January 2024 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20SE (E)	1519	2	347154 384787
	Water Abstractions Operator: Vertellus Specialites Uk Limited Licence Number: 2569028001 Permit Version: 104 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Chemicals: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20SE (E)	1519	2	347154 384787

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Vertellus Specialites Uk Limited Licence Number: 2569028001 Permit Version: 103 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 23rd November 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SE (E)	1567	2	347200 384800
	Water Abstractions Operator: Vertellus Specialites Uk Limited Licence Number: 2569028001 Permit Version: 103 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 23rd November 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SE (E)	1567	2	347200 384800
	Water Abstractions Operator: Pentagon Fine Chemicals Limited Licence Number: 2569028001 Permit Version: 102 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SE (E)	1567	2	347200 384800
	Water Abstractions Operator: Pentagon Fine Chemicals Limited Licence Number: 2569028001 Permit Version: 102 Location: Borehole At Lh S Premises Halebank Widnes Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SE (E)	1567	2	347200 384800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Great Lakes Fine Chemicals Ltd Licence Number: 2569028001 Permit Version: 100 Location: Borehole At Lh'S Premises, Halebank, Widnes, Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 4091 Yearly Rate (m3): 1136500 Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 1995 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SE (E)	1567	2	347200 384800
	Water Abstractions Operator: Great Lakes Fine Chemicals Ltd Licence Number: 2569028001 Permit Version: 100 Location: Borehole At Lh'S Premises, Halebank, Widnes, Cheshire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Halebank, Widnes, Cheshire Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 1995 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20SE (E)	1567	2	347200 384800
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 3 At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 0 Yearly Rate (m3): 0 Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'C' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1831	2	343680 384570
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole 1 At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole A At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole A At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: Borehole A At Lh S Premises Fleming Road Speke Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 2182 Yearly Rate (m3): 713722 Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'A' At Lh'S Premesis, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1929	2	343600 384710
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 102 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd December 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 101 Location: B/Hole 'B' At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1933	2	343570 384480
	Water Abstractions Operator: United Utilities Water Ltd Licence Number: 2569028014 Permit Version: 101 Location: Boreholes (2) At Greensbridge Lane Pumping Station, Whiston Authority: Environment Agency, North West Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st September 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1959	2	345800 386400
	Water Abstractions Operator: United Utilities Water Plc Licence Number: 2569028014 Permit Version: 100 Location: Boreholes (2) At Greensbridge Lane Pumping Station, Whiston Authority: Environment Agency, North West Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 11400 Yearly Rate (m3): 1500000 Details: Boreholes (2) Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 1973 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1959	2	345800 386400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 108 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th February 2025 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 107 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 16th March 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Trirx Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Trix Speke Ltd Licence Number: 2569030023 Permit Version: 106 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st February 2022 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Elanco Uk Ah Ltd Licence Number: 2569030023 Permit Version: 105 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 22nd March 2019 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 104 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th March 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premesis At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Road, Speke, Liverpool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh'S Premises At Fleming Rd, Speke, L'Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Water Abstractions Operator: Eli Lilly & Co Ltd Licence Number: 2569030023 Permit Version: 103 Location: B/Hole2 At Lh'S Premises, Fleming Rd, Speke, L'Pool Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1997	2	343506 384484
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Low Vulnerability Combined Vulnerability: Low Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Intergranular Dilution: 300-550 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: >10m Superficial Recharge: Low	A13NE (SW)	0	2	345595 384269
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13NE (SW)	0	2	345595 384269
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (SW)	0	2	345595 384269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A13NE (SW)	0	2	345595 384269
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 33.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	58	4	345730 384123
26	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 27.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	71	4	345740 384094
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 12.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	76	4	345732 384068
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 49.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	84	4	345734 384058
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	133	4	345768 384022
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 24.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13NE (E)	147	4	345819 384273
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 28.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13NE (E)	147	4	345819 384273

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 133.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	151	4	345785 384013
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (E)	156	4	345828 384251
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 50.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (E)	159	4	345831 384248
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 168.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13NE (E)	166	4	345838 384294
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 80.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (E)	190	4	345862 384211
37	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 20.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	221	4	345852 383986
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 217.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (SE)	237	4	345872 383987
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 112.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A13SE (E)	252	4	345924 384158
40	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	276	4	345839 383894

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 24.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	283	4	345839 383886
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 559.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Ram's Brook Catchment Name: Ditton Primacy: 1	A8NE (S)	289	4	345655 383774
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	305	4	345847 383863
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 107.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (S)	317	4	345591 383743
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	327	4	345860 383845
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 44.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A14SW (SE)	331	4	346001 384076
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	331	4	345862 383841
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	342	4	345867 383831
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 138.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Ram's Brook Catchment Name: Ditton Primacy: 1	A8NE (SE)	342	4	345867 383831

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 101.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	360	4	345871 383811
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 255.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A14SW (SE)	368	4	346034 384047
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Ram's Brook Catchment Name: Ditton Primacy: 1	A9NW (SE)	444	4	346004 383820
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	453	4	345905 383717
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	459	4	345919 383722
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	464	4	345921 383717
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8NE (SE)	466	4	345922 383715
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 160.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	481	4	345929 383702
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	481	4	345929 383702

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 16.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	482	4	345930 383701
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 280.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8SW (S)	486	4	345582 383574
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 121.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19SW (NE)	488	4	346083 384712
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 89.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	496	4	345946 383697
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	496	4	345946 383697
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	557	4	346145 383819
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1103.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Ram's Brook Catchment Name: Ditton Primacy: 1	A9NW (SE)	564	4	346148 383812
66	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 78.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NW (SE)	564	4	345953 383614
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19SW (NE)	598	4	346140 384819

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 219.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19SW (NE)	616	4	346152 384832
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9SW (SE)	627	4	345957 383539
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 105.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	675	4	345789 385110
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	676	4	345793 385110
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NW (N)	682	4	345566 385125
73	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 7.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NW (N)	695	4	345579 385138
74	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NW (N)	698	4	345573 385142
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 66.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NW (N)	701	4	345570 385144
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	705	4	345697 385150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 97.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	710	4	345807 385142
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 194.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19SE (NE)	736	4	346349 384738
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 35.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8SW (S)	782	4	345522 383282
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8SW (S)	799	4	345549 383262
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8SW (S)	802	4	345546 383260
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	805	4	345845 385232
83	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 57.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A8SW (S)	809	4	345553 383251
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 139.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A18NE (N)	810	4	345846 385236
85	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	813	4	346239 385029

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 193.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	815	4	346255 385017
87	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 14.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	816	4	346253 385020
88	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 213.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	817	4	346076 385156
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	818	4	346092 385148
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 31.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	818	4	346102 385142
91	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 7.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	823	4	346249 385034
92	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 80.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	826	4	346246 385041
93	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 174.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NW (NE)	828	4	346260 385031
94	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A3NE (S)	835	4	345603 383224

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
95	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 37.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A3NE (S)	841	4	345600 383218
96	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	866	4	345917 385276
97	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19SE (NE)	881	4	346416 384919
98	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 130.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	884	4	345633 385328
99	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 102.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	888	4	345875 385310
100	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 78.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A19NE (NE)	906	4	346290 385108
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	944	4	345851 385372
102	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 45.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A9NE (SE)	950	4	346574 383815
103	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 16.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SW (N)	958	4	345525 385401

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	958	4	345849 385387
105	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 95.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SW (N)	965	4	345510 385408
106	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	967	4	345842 385397
107	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 146.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	976	4	345850 385405
108	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	988	4	345878 385412
109	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 118.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A23SE (N)	995	4	345879 385418
110	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ditton Primacy: 1	A10NW (SE)	995	4	346619 383807
	Water Framework Directive - Catchment Class Code: River Catchment WaterBody Name: Ditton Brook (Halewood to Mersey Estuary) WaterBody ID: GB112069061390 Operational Catchment: Ditton Management Catchment: Mersey Lower Catchment Name: Lower Mersey	A13NE (N)	0	2	345590 384380
	Water Framework Directive - Catchment Class Code: Coastal Catchment WaterBody Name: Not Supplied WaterBody ID: 167 Operational Catchment: Ditton Management Catchment: Lower Mersey Catchment Name: Not Supplied	A13NE (SW)	0	2	345595 384269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Framework Directive - Groundwater Waterbody Name: Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers Waterbody ID: GB41201G101700 URL Address: https://environment.data.gov.uk/catchment-planning/WaterBody/GB41201G101700 Overall Rating: Poor Chemical Rating: Poor Quantitative Measure: Poor Year: 2019	A13NE (SW)	0	2	345595 384269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	Historical Landfill Sites Licence Holder: Ford Motor Factory Location: Knowsley, Merseyside Name: Crab Tree Rough Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16987 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Deposited Waste included Industrial Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: GDO M108	A13NE (SW)	0	2	345595 384269
112	Licensed Waste Management Facilities (Locations) Licence Number: 53520 Location: Land/premises At, Halewood Site, Halewood, Liverpool, Merseyside, L24 9BJ Operator Name: JAGUAR CARS LIMITED Operator Location: Not Supplied Authority: Environment Agency - North West Region, South Area Site Category: In-house Storage Facilities Licence Status: Issued Issued: 19th November 1997 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SW (W)	611	2	344893 384242
113	Licensed Waste Management Facilities (Locations) Licence Number: 50022 Location: Halewood W W T W, Ramsbrook Lane, Widnes, Cheshire, WA8 8NZ Operator Name: UNITED UTILITIES WATER LIMITED Operator Location: Not Supplied Authority: Environment Agency - North West Region, South Area Site Category: Household, Commercial And Industrial Transfer Stations Licence Status: Issued Issued: 14th May 1999 Last Modified: 14th May 1999 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	778	2	346393 383822
	Local Authority Landfill Coverage Name: Knowsley Metropolitan Borough Council - Has supplied landfill data		0	5	345595 384269
	Local Authority Landfill Coverage Name: Merseyside Waste Disposal Authority - Has supplied landfill data		0	6	345595 384269
	Local Authority Landfill Coverage Name: Halton Unitary Council - Has no landfill data to supply		127	7	345763 384026
	Local Authority Landfill Coverage Name: Liverpool City Council - Has no landfill data to supply		293	8	345590 383767
114	Local Authority Recorded Landfill Sites Location: Crab Tree Rough, Knowsley Reference: GDO108 Authority: Knowsley Metropolitan Borough Council Last Reported Status: Unknown Types of Waste: Rubble Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A13NE (SW)	0	5	345595 384269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
115	Local Authority Recorded Landfill Sites Location: Crab Tree Rough, Knowsley Reference: K006 Authority: Merseyside Waste Disposal Authority Last Reported Status: Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A13NE (E)	28	6	345700 384300
116	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NW (NW)	0	-	345539 384353
117	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SW (SW)	18	-	345516 384124
118	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A13SW (W)	250	-	345254 384231
119	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A18SE (N)	255	-	345668 384700
120	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (NW)	298	-	345347 384685
121	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	307	-	345450 384742
122	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A18SW (N)	317	-	345571 384760
123	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	333	-	345462 384771
124	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A18SW (NW)	339	-	345303 384704
125	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	343	-	345249 383912
126	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (NW)	356	-	345267 384693
127	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (E)	367	-	346039 384334
128	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12NE (W)	374	-	345128 384327
129	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (E)	374	-	346045 384305
130	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	375	-	345574 384819
131	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NW (SW)	414	-	345273 383793
132	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SE (SW)	416	-	345113 384001
133	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SE (NW)	433	-	345239 384773

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
134	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	472	-	345113 383877
135	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	523	-	345071 383848
136	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A12SE (W)	541	-	344974 384035
137	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NW (SW)	545	-	345268 383633
138	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A17SE (NW)	578	-	345113 384854
139	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SE (NW)	581	-	344981 384661
140	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NE (W)	586	-	344917 384302
141	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12NE (W)	592	-	344928 384526
142	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8SW (S)	593	-	345404 383501
143	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (NE)	597	-	346255 384581
144	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A17SE (NW)	607	-	344934 384604
145	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NW (W)	619	-	344891 384483
146	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NW (W)	644	-	344860 384445
147	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	647	-	345216 385014
148	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	709	-	345035 384960
149	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8SW (S)	710	-	345352 383396
150	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	716	-	345047 384981
151	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	726	-	345057 385002
152	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7SE (SW)	741	-	345192 383445
153	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SW (NW)	747	-	344853 384780
154	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8SW (S)	790	-	345461 383283

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
155	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	794	-	344776 383824
156	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A17SW (NW)	797	-	344812 384808
157	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7SE (SW)	830	-	345202 383335
158	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	844	-	344719 383833
159	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A23SW (N)	866	-	345330 385288
160	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	874	-	344695 383813
161	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	879	-	345154 385242
162	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (W)	898	-	344636 383912
163	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	903	-	344670 383795
164	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SW (NW)	904	-	344699 384821
165	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A7NW (SW)	905	-	344749 383643
166	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SW (W)	907	-	344598 384107
167	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A12NW (W)	918	-	344582 384369
168	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	932	-	344755 383587
169	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A3NW (S)	936	-	345426 383141
170	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NW (NW)	967	-	344710 384970
171	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A19NW (NE)	985	-	346233 385256
172	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7SW (SW)	988	-	344723 383537

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
173	Registered Waste Transfer Sites Licence Holder: North West Water Ltd Licence Reference: EAWML50022 Site Location: Halewood W.W.T.Works, Ramsbrook Lane, WIDNES, Cheshire, WA5 3LP Operator Location: PO Box 14, 410 Birchwood Boulevard, WARRINGTON, Cheshire, WA3 7GA Authority: Environment Agency - North West Region, South Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is knownOperational Dated: 14th May 1999 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Degradable Industrial Waste - As Detailed In Working Plan Maximum Waste Permitted By Licence Degradable Commercialwaste (As In Post'98 E.A.Lics & Equivalent To 22.09.02) Degradable Household Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.01) Inert Materials (As In Post'98 E.A.Lics And Equivalent To 21.00.00) Other Waste/Waste Not Otherwise Specified Scrap Metal (As In Post'98 E.A.Lics And Equivalent To 23.00.00) Special Waste (As In Epa 1990:S62 Of 1996 Regs) Prohibited Waste	A9NE (SE)	774	2	346400 383850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
174	Planning Hazardous Substance Consents Name: Ford Motor Co Location: Halewood Bao & Tac Operations, Liverpool, Merseyside, L24 9le Authority: Knowsley Metropolitan Borough Council Application Ref: K/Hsc/8 Hazardous Substance: Part C, Flammable Substance (Not in Parts A&B), Liquefied petroleum gas held at >1.4 bar where amount held is greater than or equal to 25 tonnes Maximum Quantity: 30 Application date: 30th November 1992 Decision: Deemed consent granted between June 1992 and November 1992 Granted Positional Accuracy: Manually positioned to the address or location	A12SE (W)	500	5	345016 384032

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Permian Rocks (Undifferentiated)	A13NE (SW)	0	1	345595 384269
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13NE (SW)	0	1	345595 384269
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (S)	59	1	345595 384000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A13SE (SE)	92	1	345753 384070
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (SE)	229	1	345870 384000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	326	1	346000 384269
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NE (S)	336	1	345644 383725

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A7NE (SW)	484	1	345149 383812
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A14SE (E)	598	1	346280 384175
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A9NW (SE)	622	1	346229 383838
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A9NW (SE)	642	1	346218 383776
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A12SW (W)	846	1	344651 384139
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A17SW (NW)	867	1	344678 384675

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A3NW (S)	985	1	345326 383113
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	345753 384070
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	345753 384070
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	345753 384070
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	345595 384269

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
175	Contemporary Trade Directory Entries Name: J K Recovery (Liverpool) Location: 28, Sandhurst Road, Liverpool, L26 9YA Classification: Breakdown and Recovery Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	301	-	345269 384610
176	Contemporary Trade Directory Entries Name: Webber Engineering Ltd Location: Ford Motor Car Works, Speke Boulevard, Halewood, Liverpool, Merseyside, L24 9LE Classification: Engineers - General Status: Active Positional Accuracy: Manually positioned within the geographical locality	A12SE (SW)	308	-	345199 384102
176	Contemporary Trade Directory Entries Name: Getrag Ford Transmission Location: Halewood, Liverpool, L24 9LE Classification: Car Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (SW)	308	-	345199 384102
177	Contemporary Trade Directory Entries Name: Getrag Location: Halewood, Liverpool, Merseyside, L24 9LE Classification: Gearboxes Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (SW)	383	-	345161 383972
177	Contemporary Trade Directory Entries Name: Halewood Body & Assembly Location: Halewood, Liverpool, L24 9LE Classification: Car Manufacturers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A12SE (SW)	423	-	345130 383944
178	Contemporary Trade Directory Entries Name: Hident Clinical Services Location: 10, Calveley Grove, Liverpool, L26 9YW Classification: Medical Waste Disposal Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (N)	411	-	345408 384838
179	Contemporary Trade Directory Entries Name: Ford Motor Co Ltd Location: Speke Boulevard, Halewood, Liverpool, Merseyside, L24 9LE Classification: Car Manufacturers Status: Active Positional Accuracy: Manually positioned to the address or location	A12NE (W)	434	-	345070 384264
180	Contemporary Trade Directory Entries Name: Crown Control Systems Location: Halewood, Liverpool, Merseyside, L24 9LE Classification: Automation Systems & Equipment Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A12SE (SW)	507	-	345039 383940
181	Contemporary Trade Directory Entries Name: Group Path Finder Location: Ramsbrook Lane, Widnes, Cheshire, WA8 8NZ Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	520	-	346192 384240
182	Contemporary Trade Directory Entries Name: Groupe Pathfinder Ltd Location: Ramsbrook La, Widnes, Cheshire, WA8 8NZ Classification: Radio Communication Equipment Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A14SW (E)	522	-	346194 384163
183	Contemporary Trade Directory Entries Name: Wholesale Blinds Location: 2, Harland Green, Liverpool, L24 6SZ Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A7SE (SW)	810	-	345038 383479

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
184	Contemporary Trade Directory Entries Name: Jaguar & Land Rover Location: Speke Boulevard, Halewood, Liverpool, Merseyside, L24 9BJ Classification: Car Manufacturers Status: Active Positional Accuracy: Manually positioned within the geographical locality	A11SE (W)	969	-	344540 384050
184	Contemporary Trade Directory Entries Name: Leadec Location: Jaguar Land Rover, Halewood, Liverpool, Merseyside, L24 9BJ Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Manually positioned to the address or location	A11SE (W)	969	-	344540 384050
185	Points of Interest - Commercial Services Name: Speke Auto Services Location: 113 Alderwood Avenue, Liverpool, L24 7RB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7SE (SW)	936	10	345143 383247
186	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	276	10	345224 384366
186	Points of Interest - Manufacturing and Production Name: Tank Location: L26 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NE (W)	286	10	345214 384370
186	Points of Interest - Manufacturing and Production Name: Tank Location: L26 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NE (W)	287	10	345213 384367
186	Points of Interest - Manufacturing and Production Name: Tank Location: L26 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NE (W)	288	10	345213 384364
186	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	309	10	345191 384373
186	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	336	10	345164 384366
187	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	279	10	345225 384155
187	Points of Interest - Manufacturing and Production Name: Works Location: L24 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	289	10	345215 384153
188	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	315	10	345189 384245

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
188	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	316	10	345188 384249
188	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	319	10	345185 384246
189	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	325	10	345226 383973
190	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	527	10	344987 384043
190	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	527	10	344989 384029
190	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	531	10	344984 384035
190	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	535	10	344979 384042
190	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	541	10	344973 384042
190	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	542	10	344974 384029
191	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	626	10	344927 383899
192	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	750	10	344754 384184
192	Points of Interest - Manufacturing and Production Name: Works Location: L24 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	762	10	344742 384176

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
193	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NW (W)	831	10	344670 384336
193	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NW (W)	846	10	344655 384336
193	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NW (W)	864	10	344637 384336
193	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NW (W)	881	10	344620 384337
193	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	892	10	344609 384347
194	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	884	10	344671 383846
194	Points of Interest - Manufacturing and Production Name: Works Location: L24 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	896	10	344659 383843
195	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12NW (W)	899	10	344602 384336
195	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	927	10	344577 384264
195	Points of Interest - Manufacturing and Production Name: Tanks Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	928	10	344576 384231
195	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SW (W)	929	10	344575 384235
195	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A11SE (W)	938	10	344566 384235

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
195	Points of Interest - Manufacturing and Production Name: Tank Location: L24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	950	10	344554 384266
196	Points of Interest - Manufacturing and Production Name: Factory Location: L24 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11SE (W)	963	10	344541 384130
197	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	290	10	345619 383769
197	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	291	10	345615 383768
197	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	296	10	345607 383763
197	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	297	10	345604 383762
198	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	332	10	345832 383814
198	Points of Interest - Public Infrastructure Name: Weir Location: L24 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	334	10	345835 383815
199	Points of Interest - Public Infrastructure Name: Sewage Works Location: WA8 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A9NE (SE)	675	10	346304 383878
200	Points of Interest - Public Infrastructure Name: Sewage Works Location: WA8 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	789	10	346401 383812
200	Points of Interest - Public Infrastructure Name: Settling Tanks Location: WA8 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	796	10	346421 383846
201	Points of Interest - Public Infrastructure Name: Halewood Police Station - No Public Counter Services Location: Police Station, Leathers Lane, Liverpool, L26 1XG Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A17SW (NW)	934	10	344678 384848

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
202	Points of Interest - Public Infrastructure Name: Bus Station Location: L26 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	950	10	344915 385176
203	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	777	10	345118 383455
203	Points of Interest - Recreational and Environmental Name: Playground Location: Maintree Crescent, L24 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7SE (SW)	779	10	345116 383455
204	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	781	10	345220 383381
205	Points of Interest - Recreational and Environmental Name: Playground Location: L24 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	809	10	345006 383504
205	Points of Interest - Recreational and Environmental Name: Playground Location: Harland Green, L24 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7SE (SW)	809	10	345010 383501

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
206	Ancient Woodland Name: Mill Wood Reference: 1109012 Area(m²): 127567.45 Type: Ancient and Semi-Natural Woodland	A13SE (SE)	235	11	345869 383984
207	Areas of Adopted Green Belt Authority: Knowsley Metropolitan Borough Council Plan Name: Proposal Map Status: Adopted Plan Date: 6th January 2016	A13SE (SE)	126	5	345808 384088
208	Areas of Adopted Green Belt Authority: Halton Borough Council Plan Name: Halton Unitary Development Plan Status: Adopted Plan Date: 7th April 2005	A13SE (SE)	128	12	345795 384053
209	Areas of Adopted Green Belt Authority: Liverpool City Council Plan Name: Liverpool Unitary Development Plan Status: Adopted Plan Date: 30th November 2002	A8NE (S)	292	13	345588 383768
210	Areas of Unadopted Green Belt Authority: Halton Borough Council Plan Name: Delivery And Allocations Status: Submission Draft Plan Date: 5th March 2020	A13SE (SE)	128	12	345764 384026
211	Areas of Unadopted Green Belt Authority: Liverpool City Council Plan Name: Liverpool Local Plan Status: Submission Draft Plan Date: 22nd May 2018	A8NE (S)	292	13	345589 383768
212	Local Nature Reserves Name: Millwood & Alder Woo Multiple Area: N Area (m2): 228372.28 Source: Natural England Designation Date: 28th May 2004	A13SE (SE)	133	11	345804 384057
213	Nitrate Vulnerable Zones Name: Dittton Brook (Halewood To Mersey Estuary) Nvz Description: Surface Water Source: Environment Agency, Head Office	A13NE (N)	5	2	345595 384450

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Cheshire West and Chester Council - Environmental Health Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Community Services Directorate Environment Agency - Head Office Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council - Department of Planning and Development Liverpool City Council - Liverpool Environmental Health & Trading Standards Division	July 2025 March 2008 November 2008 November 2023 October 2017 September 2017 September 2017	Annually Not Applicable Annually Annual Rolling Update Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - North West Region	July 2025	Quarterly
Enforcement and Prohibition Notices Environment Agency - North West Region	March 2013	
Integrated Pollution Controls Environment Agency - North West Region	January 2009	
Integrated Pollution Prevention And Control Environment Agency - North West Region	April 2025	Bi-Annually
Local Authority Integrated Pollution Prevention And Control Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Halton Borough Council - Environmental Health Department	December 2015 January 2015 July 2015 June 2009 May 2009 November 2014	Variable Variable Variable Not Applicable Not Applicable Variable
Local Authority Pollution Prevention and Controls Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Halton Borough Council - Environmental Health Department	December 2015 January 2015 July 2015 June 2009 May 2009 November 2014	Annually Annual Rolling Update Annually Not Applicable Not Applicable Not Applicable
Local Authority Pollution Prevention and Control Enforcements Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Halton Borough Council - Environmental Health Department	December 2015 January 2015 July 2015 June 2009 May 2009 November 2014	Variable Variable Variable Not Applicable Not Applicable Variable
Nearest Surface Water Feature Ordnance Survey	November 2025	
Pollution Incidents to Controlled Waters Environment Agency - North West Region	January 2000	
Historical Prosecutions Environment Agency, North West Region	March 2013	Not Applicable

Agency & Hydrological	Version	Update Cycle
Registered Radioactive Substances Environment Agency - Head Office Environment Agency - North West Region	May 2023 May 2023	
Substantiated Pollution Incident Register Environment Agency - North West Region - South Area	July 2025	Quarterly
Water Abstractions Environment Agency - North West Region	July 2025	Quarterly
Water Industry Act Referrals Environment Agency - North West Region	October 2017	
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	As notified
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	As notified
Source Protection Zones Environment Agency - Head Office	August 2025	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	December 2023	As notified
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	December 2023	As notified
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2023	
Flood Water Storage Areas Environment Agency - Head Office	June 2025	Quarterly
Flood Defences Environment Agency - Head Office	August 2022	
OS Water Network Lines Ordnance Survey	October 2025	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water Suitability Environment Agency - Head Office	February 2016	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified
Water Framework Directive - Catchment Environment Agency - Head Office	July 2025	Annually
Water Framework Directive - Groundwater Environment Agency - Head Office	July 2025	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites Environment Agency - Head Office	April 2025	Bi-Annually
Integrated Pollution Control Registered Waste Sites Environment Agency - North West Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North West Region - South Area	July 2025	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North West Region - South Area	April 2025	Bi-Annually
Local Authority Landfill Coverage Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Merseyside Waste Disposal Authority Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department	February 2003 February 2003 February 2003 February 2003 February 2003 February 2003	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Merseyside Waste Disposal Authority Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department	October 2018 October 2018 October 2018 October 2018 October 2018 October 2018	
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	
Registered Landfill Sites Environment Agency - North West Region - South Area	March 2006	Not Applicable
Registered Waste Transfer Sites Environment Agency - North West Region - South Area	April 2018	
Registered Waste Treatment or Disposal Sites Environment Agency - North West Region - South Area	June 2015	

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	June 2025	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements Vale Royal Borough Council (now part of Cheshire West and Chester Council) Knowsley Metropolitan Borough Council Cheshire West and Chester Council - Planning Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Liverpool City Council Cheshire County Council (now part of Cheshire East Council) - Planning Department Halton Borough Council	August 2009 August 2015 August 2023 December 2008 January 2016 July 2008 March 2023	Not Applicable Variable Variable Not Applicable Variable Annual Rolling Update Variable
Planning Hazardous Substance Consents Vale Royal Borough Council (now part of Cheshire West and Chester Council) Cheshire West and Chester Council - Planning Department Halton Borough Council Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Cheshire County Council (now part of Cheshire East Council) - Planning Department Knowsley Metropolitan Borough Council Liverpool City Council	August 2009 August 2022 August 2022 December 2008 July 2008 September 2022 September 2022	Not Applicable Variable Variable Not Applicable Annual Rolling Update Variable Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	As notified
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	December 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2025	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	November 2025	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	November 2025	Annually
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	December 2025	Quarterly
Fuel Station Entries Green Street Advisor (UK) Ltd	November 2025	Quarterly
Points of Interest - Commercial Services PointX	December 2025	Quarterly
Points of Interest - Education and Health PointX	December 2025	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2025	Quarterly
Points of Interest - Public Infrastructure PointX	December 2025	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2025	Quarterly
Underground Electrical Cables National Grid	January 2024	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	September 2025	Bi-Annually
Areas of Adopted Green Belt Cheshire West and Chester Council - Planning Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council Knowsley Metropolitan Borough Council Liverpool City Council Vale Royal Borough Council (now part of Cheshire West and Chester Council)	July 2025 July 2025 July 2025 July 2025 July 2025 July 2025	Quarterly Quarterly Quarterly Quarterly Quarterly Quarterly
Areas of Unadopted Green Belt Cheshire West and Chester Council - Planning Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council Knowsley Metropolitan Borough Council Liverpool City Council Vale Royal Borough Council (now part of Cheshire West and Chester Council)	July 2025 July 2025 July 2025 July 2025 July 2025 July 2025	Quarterly Quarterly Quarterly Quarterly Quarterly Quarterly
Areas of Outstanding Natural Beauty Natural England	November 2025	Bi-Annually
Environmentally Sensitive Areas Natural England	August 2023	
Forest Parks Forestry Commission	May 2023	Not Applicable
Local Nature Reserves Natural England	August 2025	Bi-Annually
Marine Nature Reserves Natural England	August 2025	Bi-Annually
National Nature Reserves Natural England	July 2025	Bi-Annually
National Parks Natural England	September 2025	Annually
Nitrate Sensitive Areas Natural England	April 2023	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA) Environment Agency - Head Office	April 2016 November 2025	Annually
Ramsar Sites Natural England	August 2025	Bi-Annually
Sites of Special Scientific Interest Natural England	November 2025	Bi-Annually
Special Areas of Conservation Natural England	July 2025	Bi-Annually
Special Protection Areas Natural England	November 2025	Bi-Annually

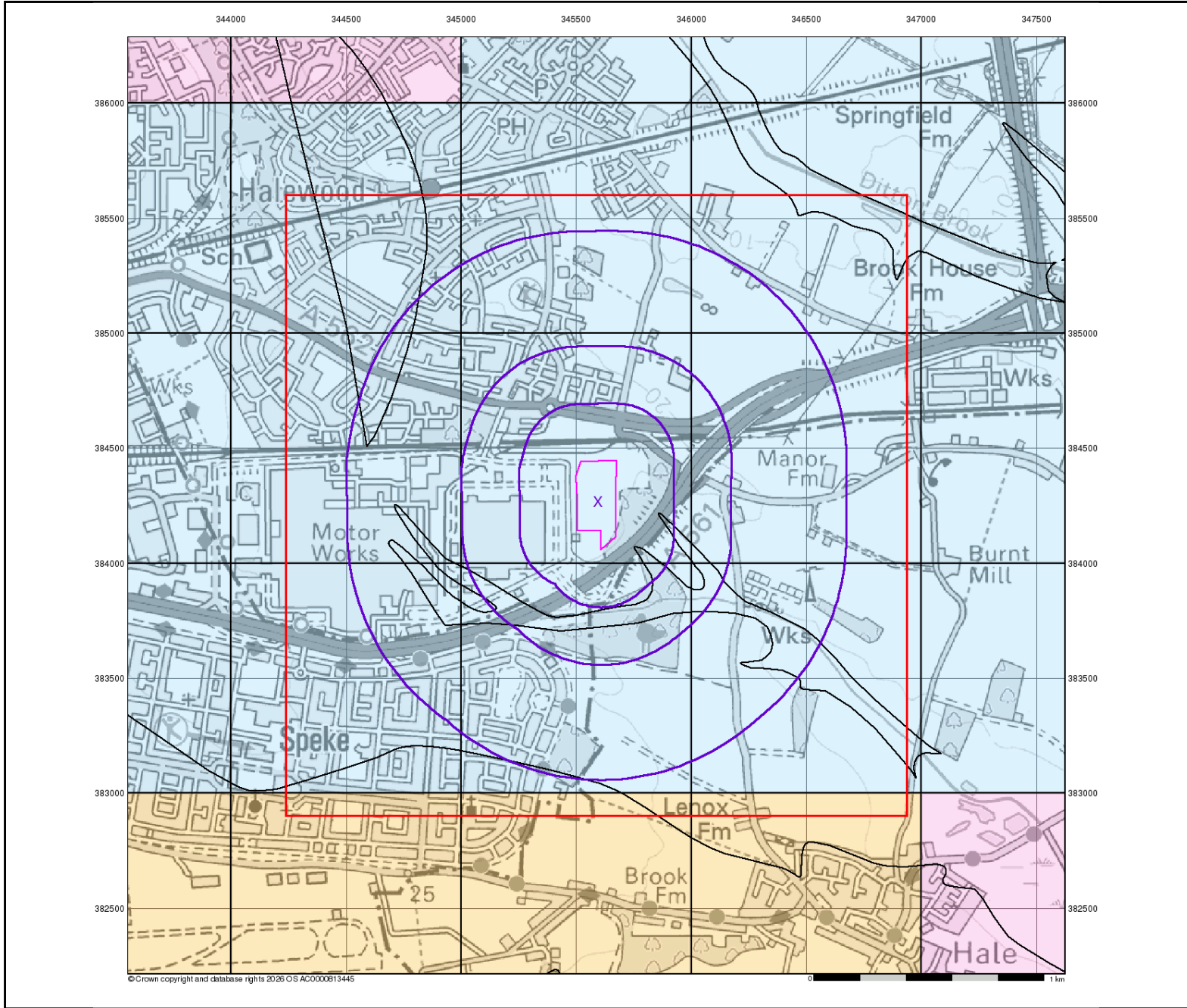
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	
3	Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Municipal Buildings, Cherryfield Drive, Kirkby, Knowsley, Merseyside, L32 1TX	
4	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	
5	Knowsley Metropolitan Borough Council Archway Road, Huyton, Liverpool, Merseyside, L36 9YU	
6	Merseyside Waste Disposal Authority 2nd Floor, North House, 17 North John Street, Liverpool, Merseyside, L2 5QY	
7	Halton Borough Council - Environmental Health Department Grosvenor House, Halton Lea, Runcorn, Cheshire, WA7 2GW	
8	Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Millenium House, 60 Victoria Street, Liverpool, Merseyside, L1 6LD	
9	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	
10	PointX 5-6 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	
11	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	
12	Halton Borough Council Municipal Buildings, Kingsway, Widnes, Cheshire, WA8 7QF	
13	Liverpool City Council 5th floor , Steers House, Canning Place, Liverpool, Merseyside, L1 8JA	
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	
-	Landmark Information Group Limited Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	

Contact	Name and Address	Contact Details
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Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



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Groundwater Vulnerability

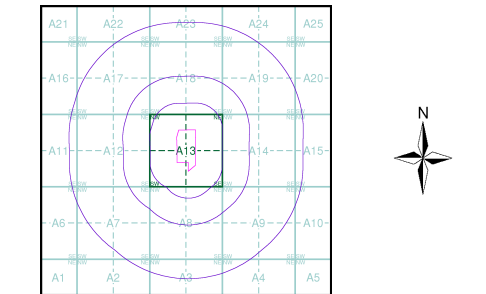
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- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Slice
 - Map ID

Agency and Hydrological

- | Bedrock Aquifers | Superficial Aquifers |
|---|---|
| High Vulnerability, Principal Aquifer | High Vulnerability, Principal Aquifer |
| High Vulnerability, Secondary Aquifer | High Vulnerability, Secondary Aquifer |
| Medium Vulnerability, Principal Aquifer | Medium Vulnerability, Principal Aquifer |
| Medium Vulnerability, Secondary Aquifer | Medium Vulnerability, Secondary Aquifer |
| Low Vulnerability, Principal Aquifer | Low Vulnerability, Principal Aquifer |
| Low Vulnerability, Secondary Aquifer | Low Vulnerability, Secondary Aquifer |

- Unproductive Aquifer
- Soluble Rock

Site Sensitivity Context Map - Slice A

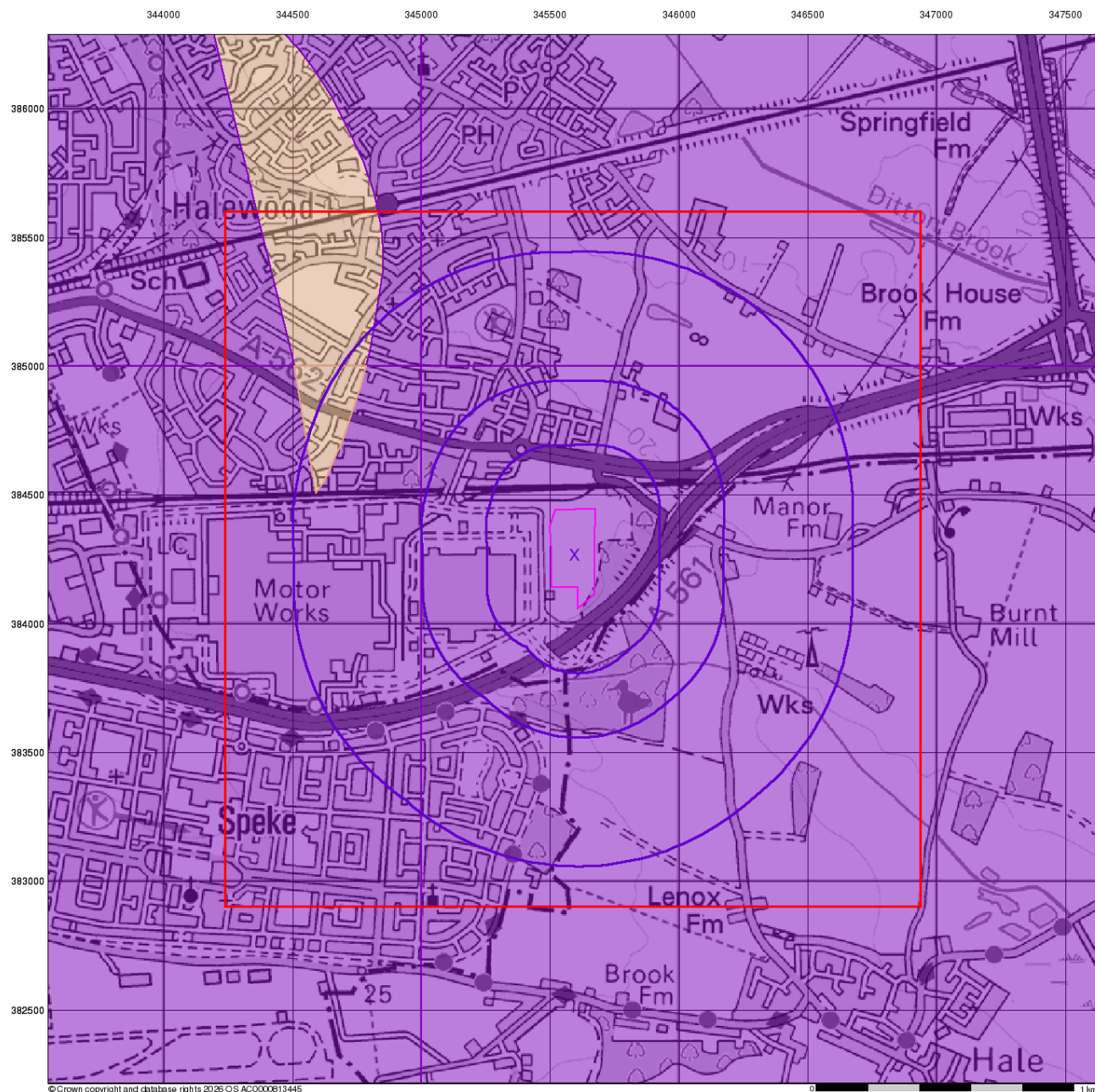


- Order Details**
- | | |
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| Slice: | A |
| Site Area (Ha): | 5.46 |
| Search Buffer (m): | 1000 |

- Site Details**
- Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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Bedrock Aquifer Designation

General

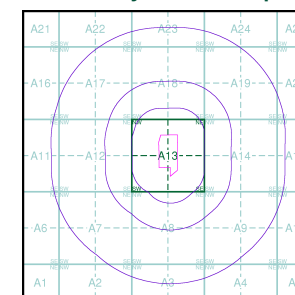
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- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

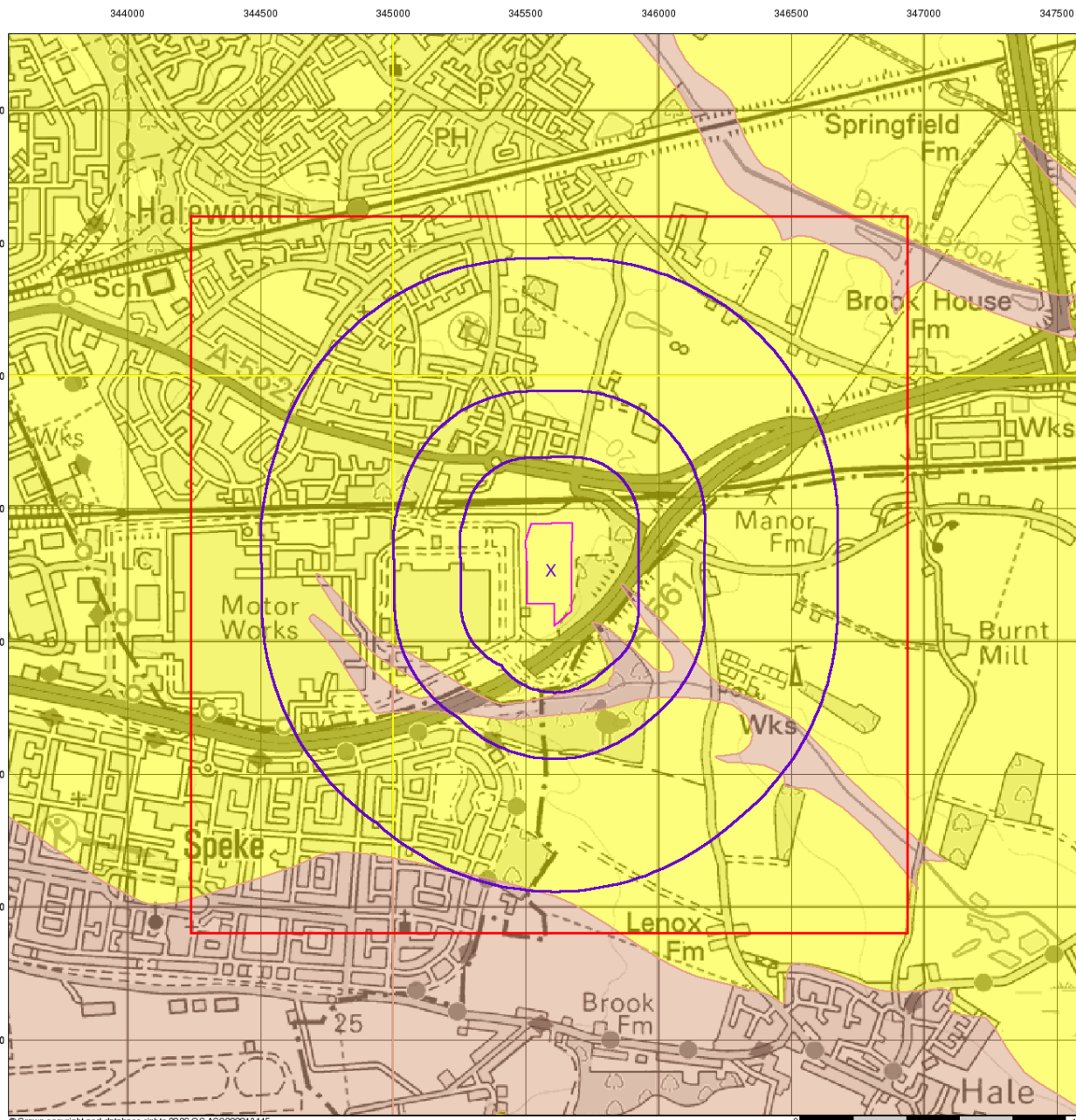
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Site Details

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Superficial Aquifer Designation

General

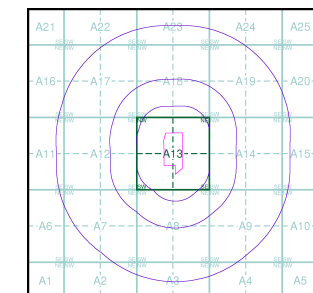
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- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

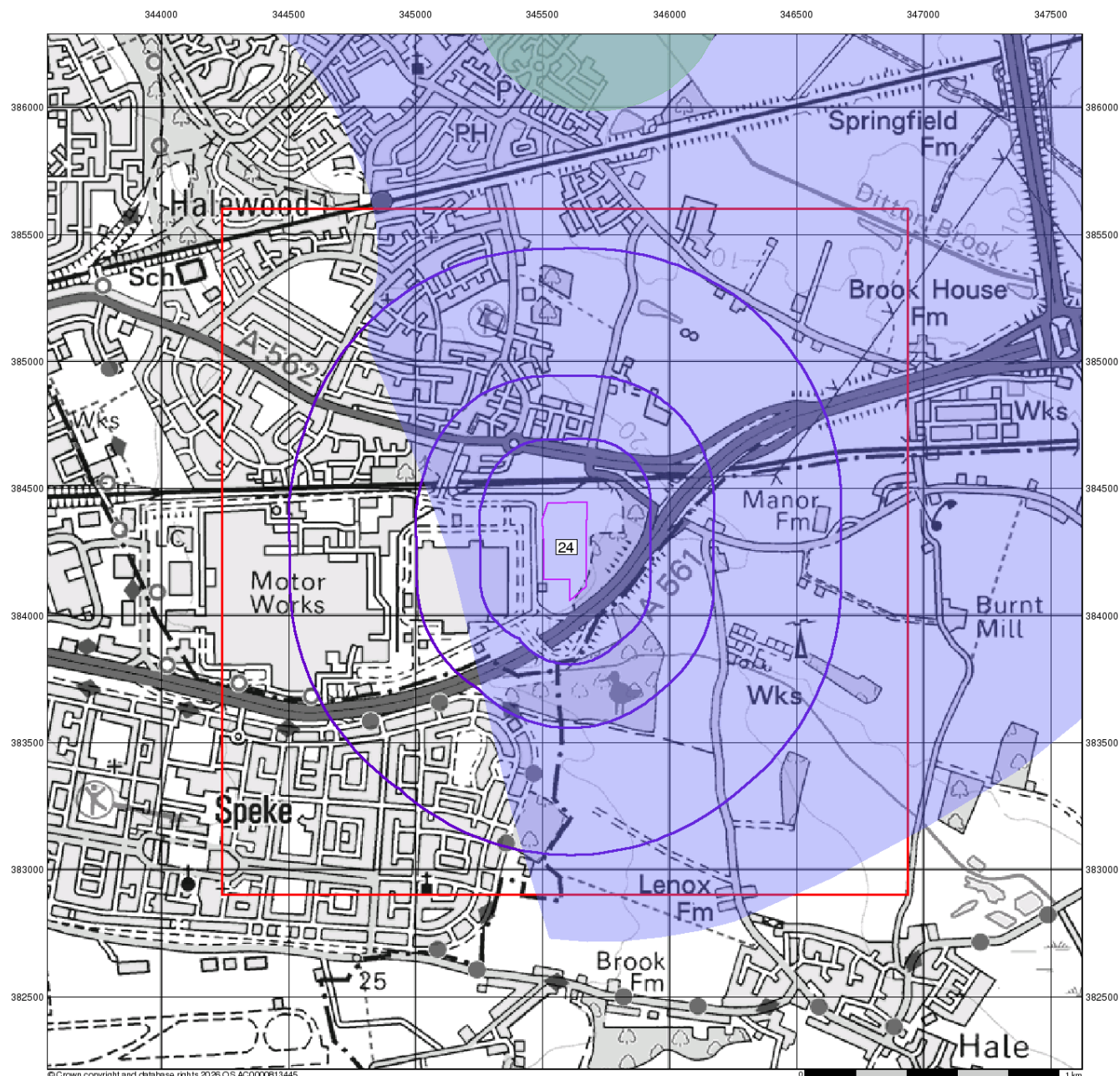
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 Site Area (Ha): 5.46
 Search Buffer (m): 1000

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Source Protection Zones

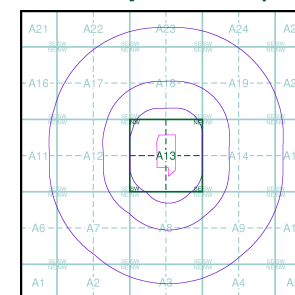
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



Order Details

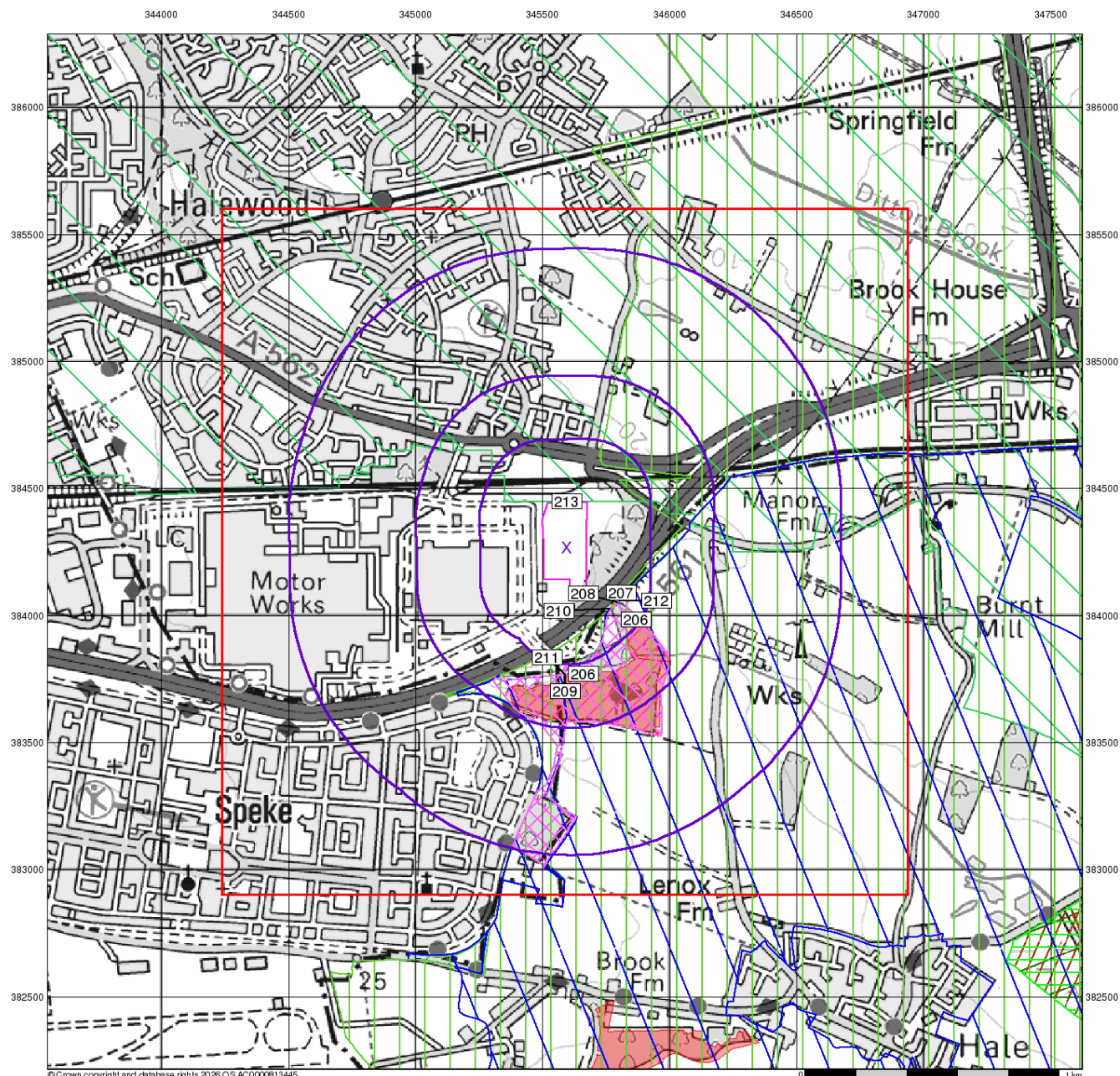
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 Site Area (Ha): 5.46
 Search Buffer (m): 1000

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Sensitive Land Uses

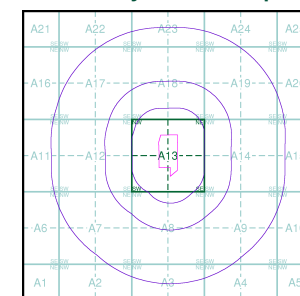
General

- ◇ Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Slice
- B Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

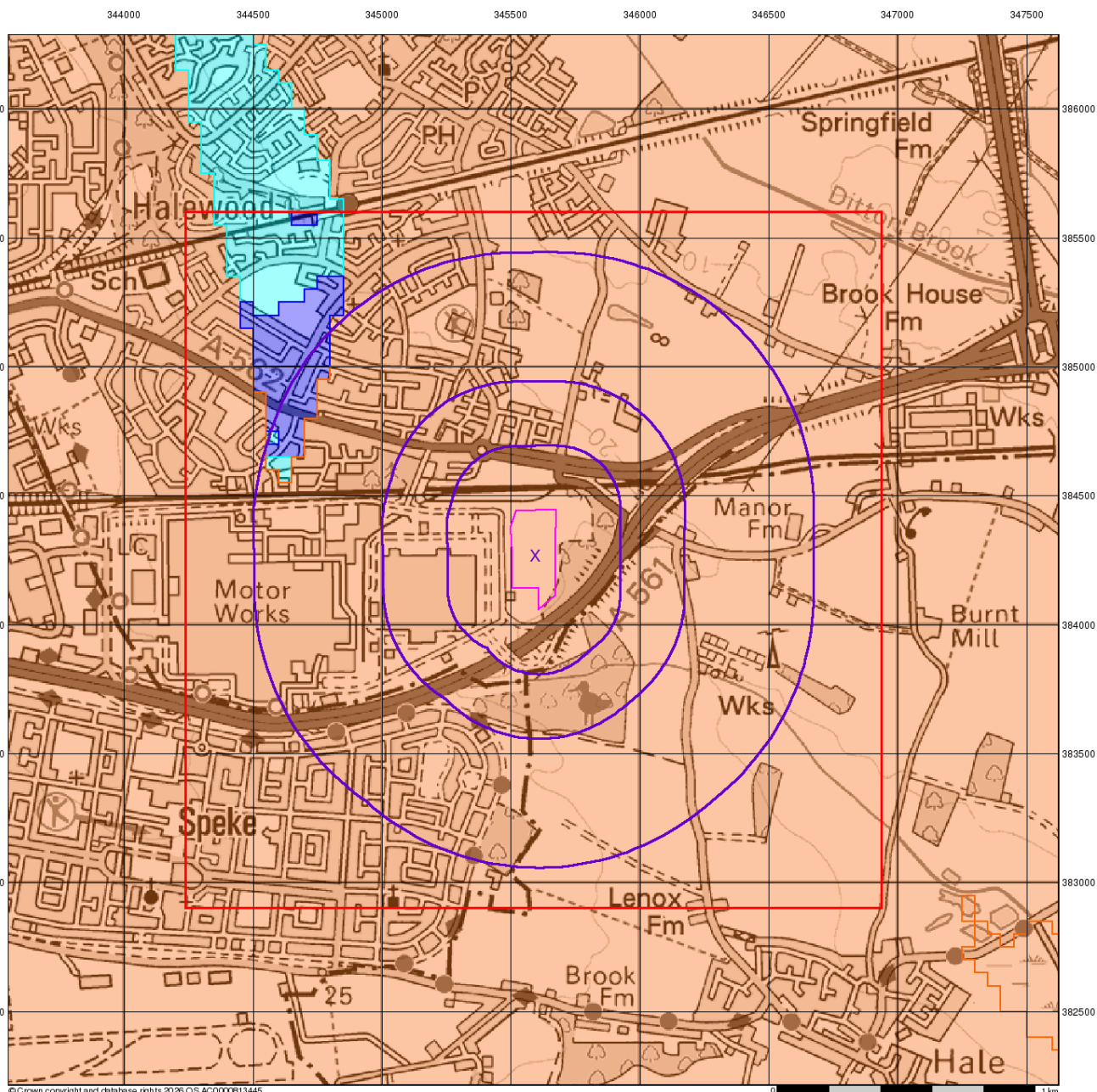
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 Site Area (Ha): 5.46
 Search Buffer (m): 1000

Site Details

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BGS Flood GFS Data

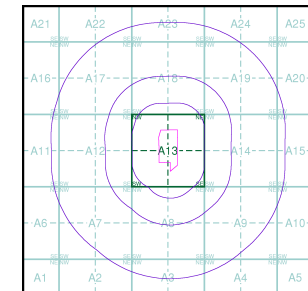
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

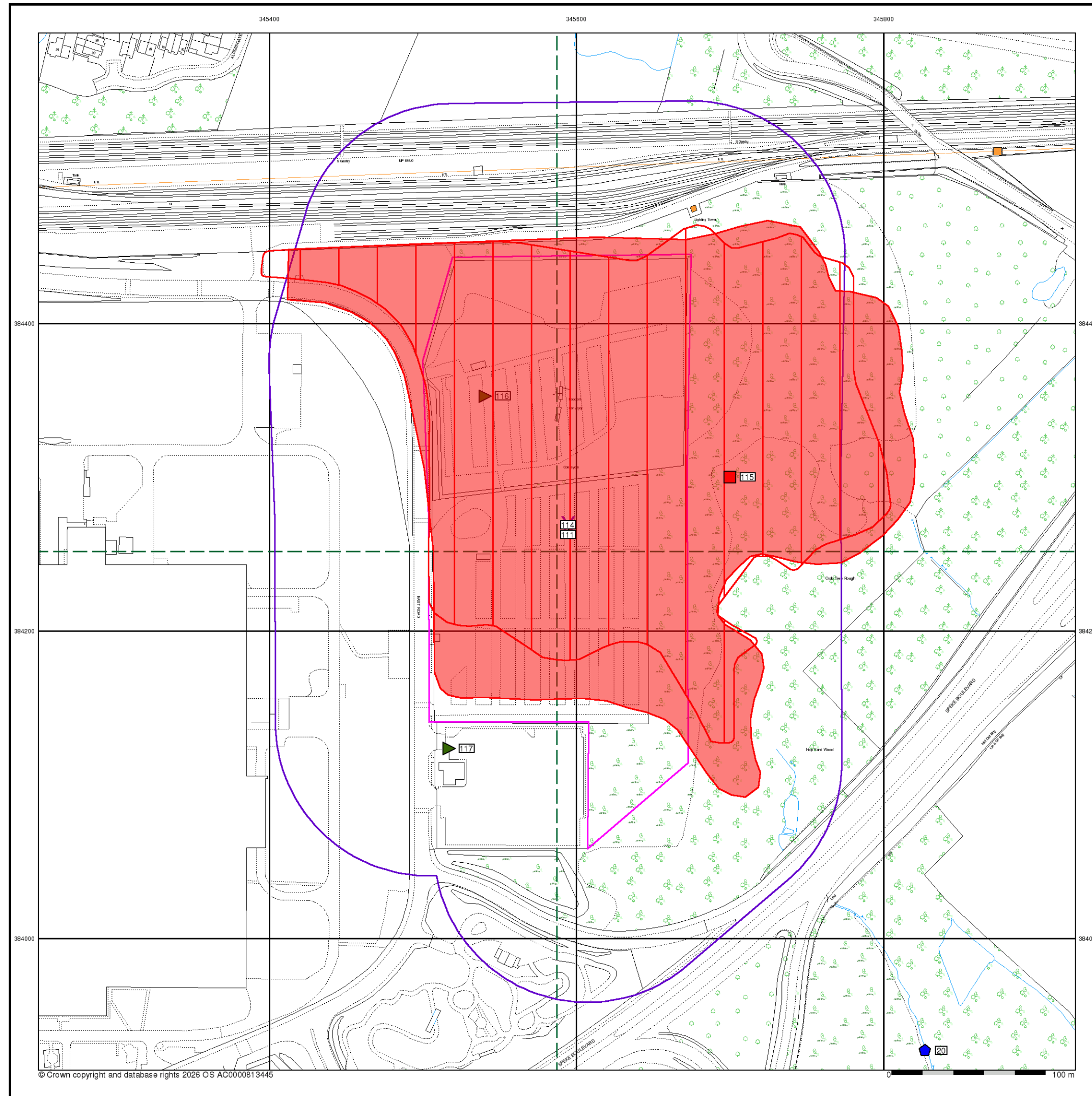
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 Slice: A
 Site Area (Ha): 5.46
 Search Buffer (m): 1000

Site Details

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- ### General

 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
- ### Agency and Hydrological

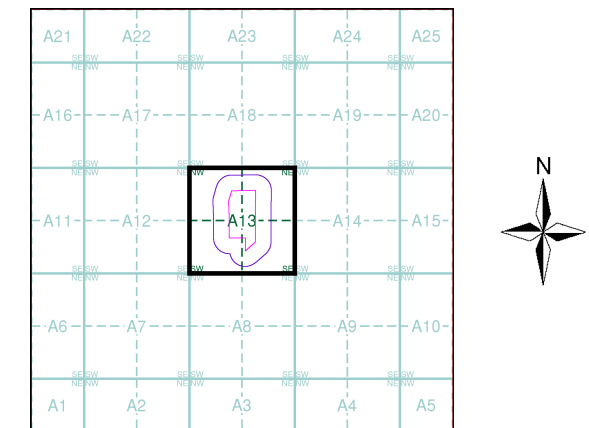
 - Several of Type at Location
 - Pylon
 - Overhead Transmission Line
 - Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Historical Prosecutions
 - Prosecutions
 - Registered Radioactive Substance
 - River Network or Water Feature
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- ### Waste

 - BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- ### Hazardous Substances

 - COMAH Site
 - Explosive Site
 - NIHHS Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- ### Geological

 - BGS Recorded Mineral Site

Site Sensitivity Map - Segment A13

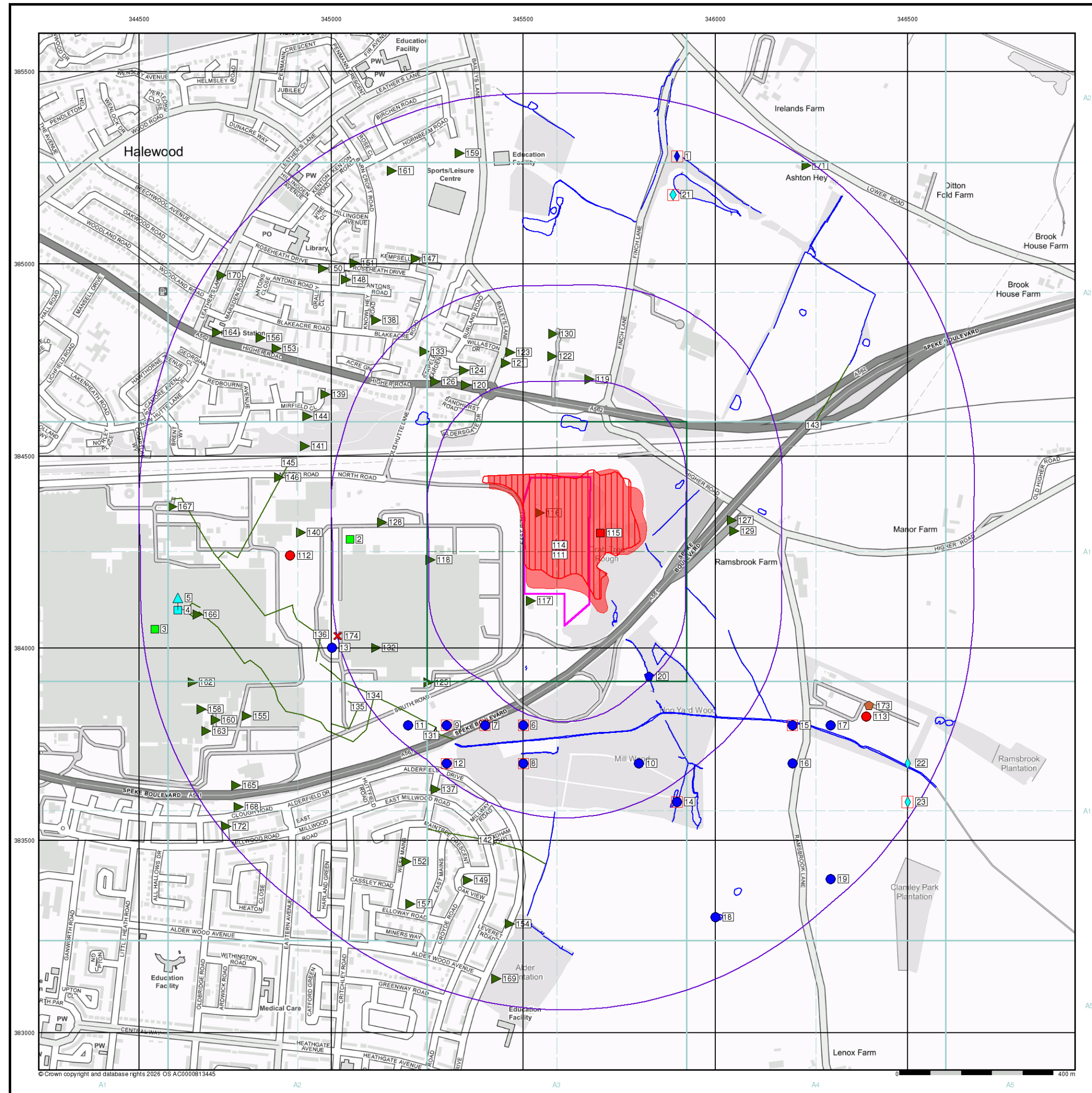


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Plot Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



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- General**

 - Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
- Agency and Hydrological**

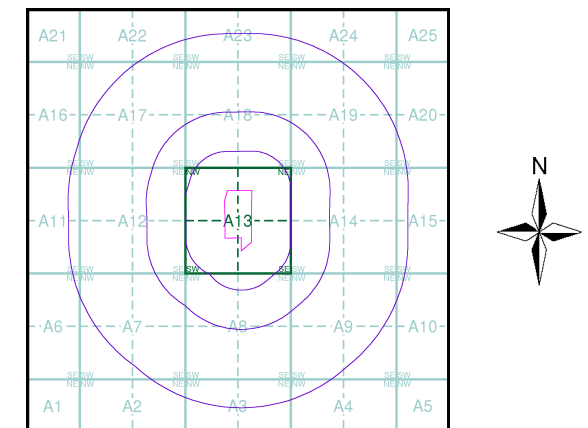
 - Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Historical Prosecutions
 - Prosecutions
 - Registered Radioactive Substance
 - River Network or Water Feature
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**

 - BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**

 - COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**

 - BGS Recorded Mineral Site

Site Sensitivity Map - Slice A

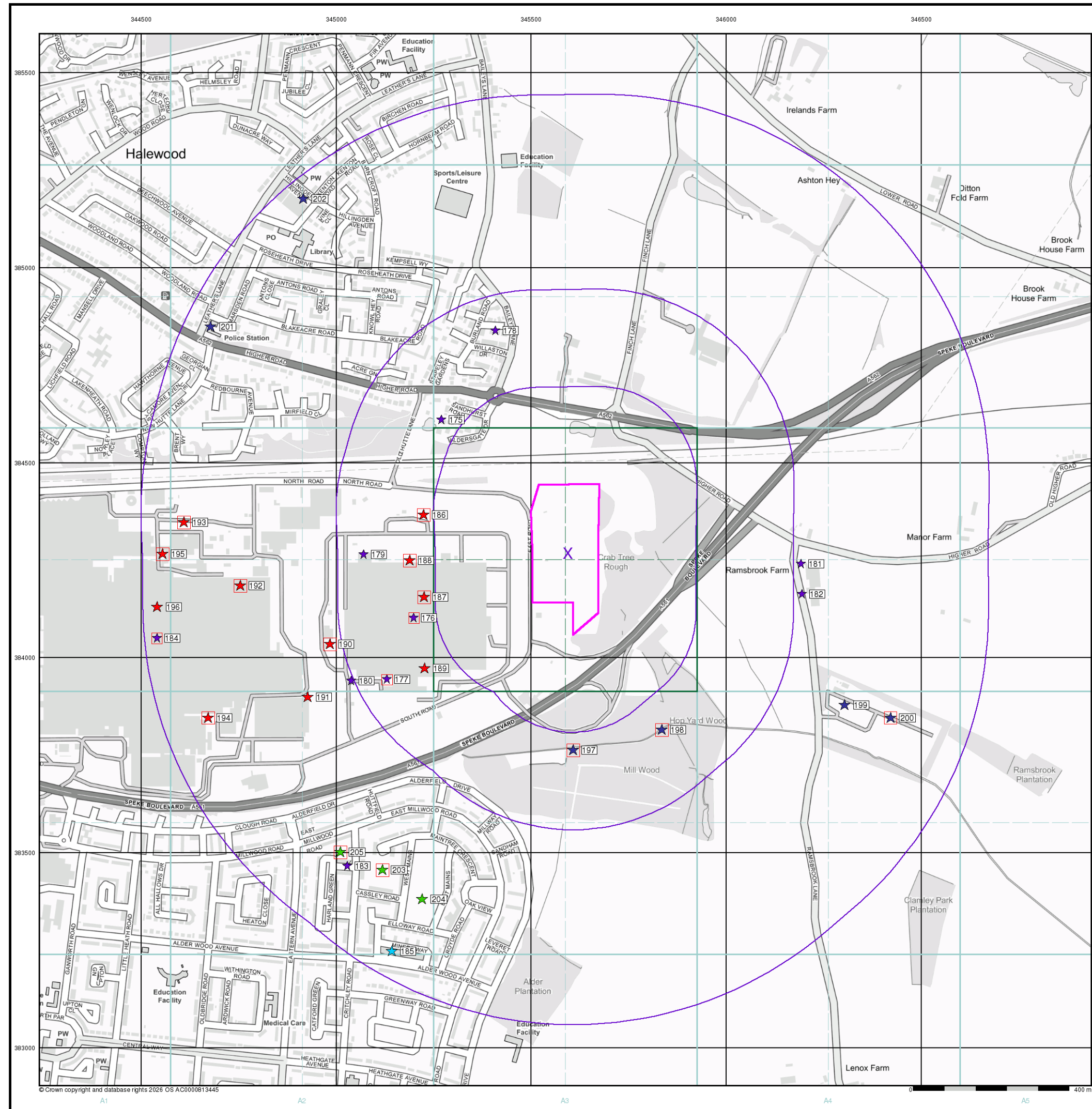


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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Industrial Land Use Map

General

Specified Site

Specified Buffer(s)

Bearing Reference Point

Slice

Map ID

Industrial Land Use

- ★ Contemporary Trade Directory Entry
- ★ Fuel Station Entry
- ★ Points of Interest - Commercial Services
- ★ Points of Interest - Education and Health
- ★ Points of Interest - Manufacturing and Production
- ★ Points of Interest - Public Infrastructure
- ★ Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A

N

Order Details

Order Number:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	1000

Site Details

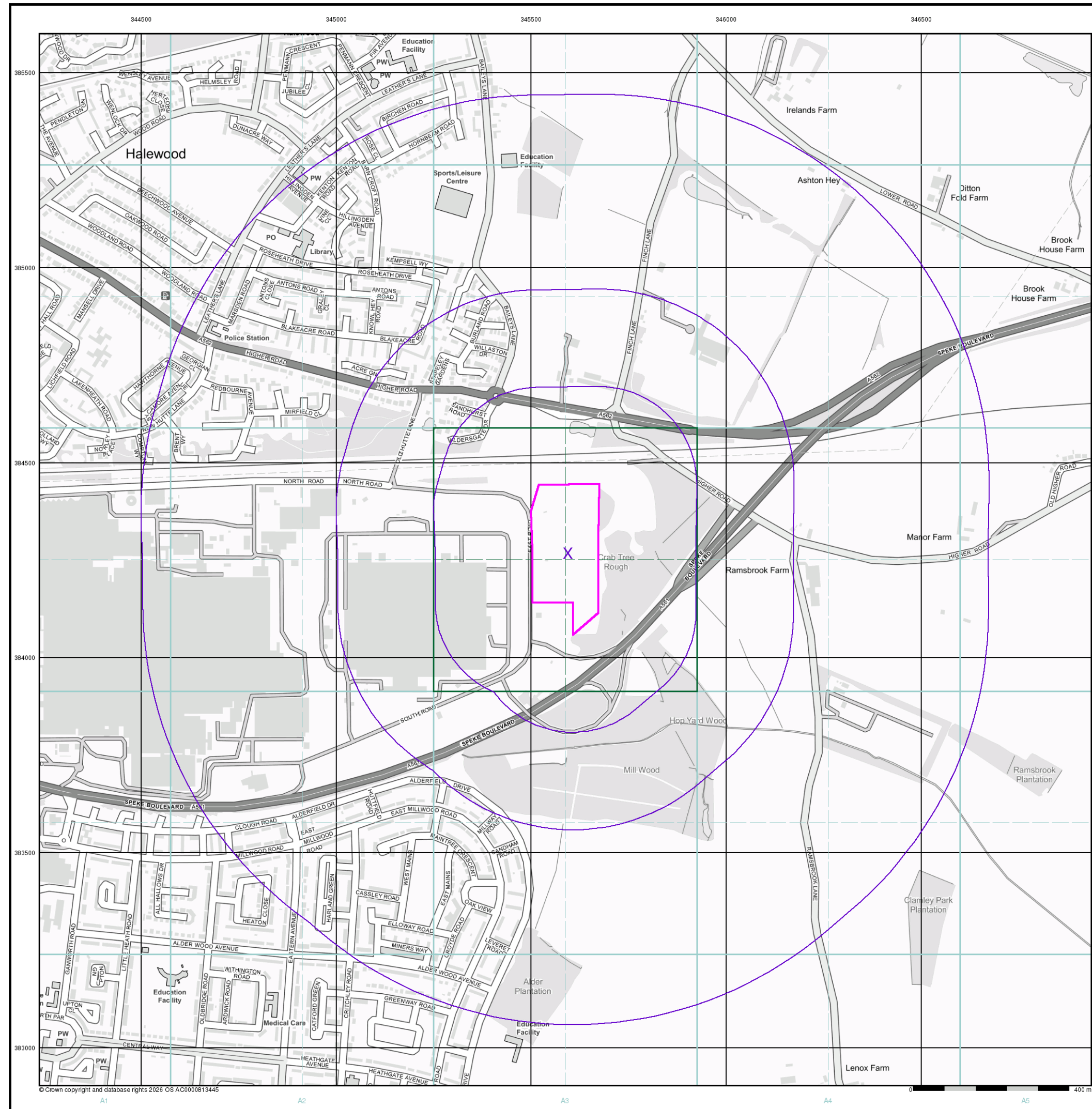
Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A

Order Details

Order Number:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	1000

Site Details

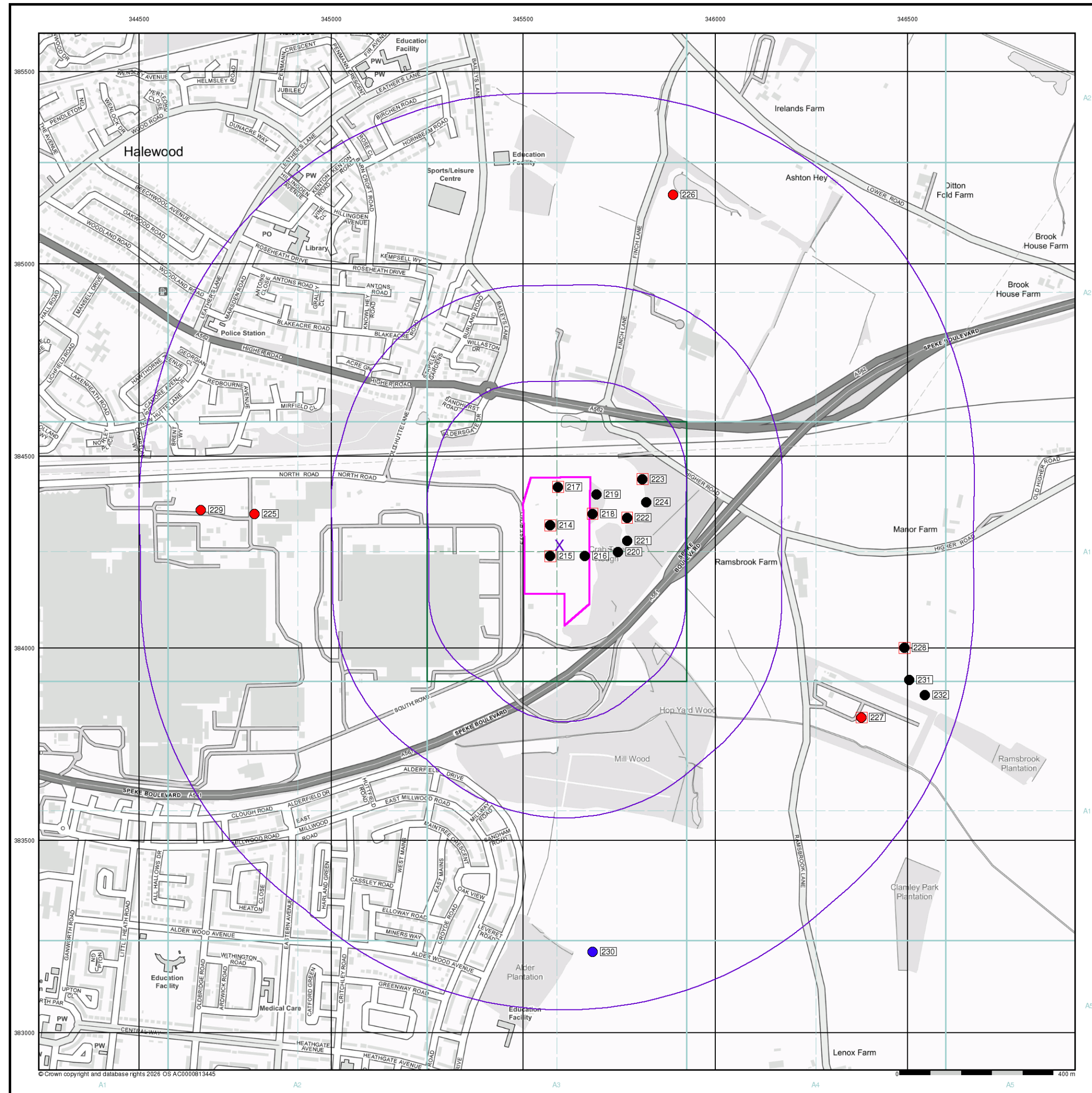
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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

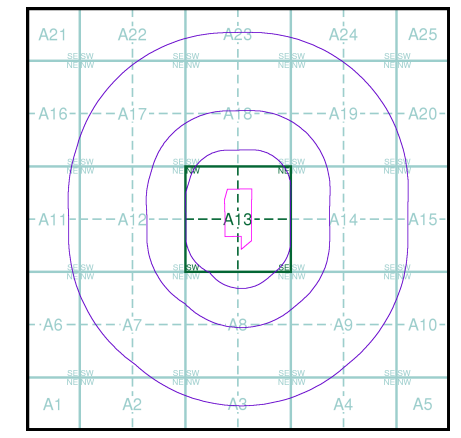
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A

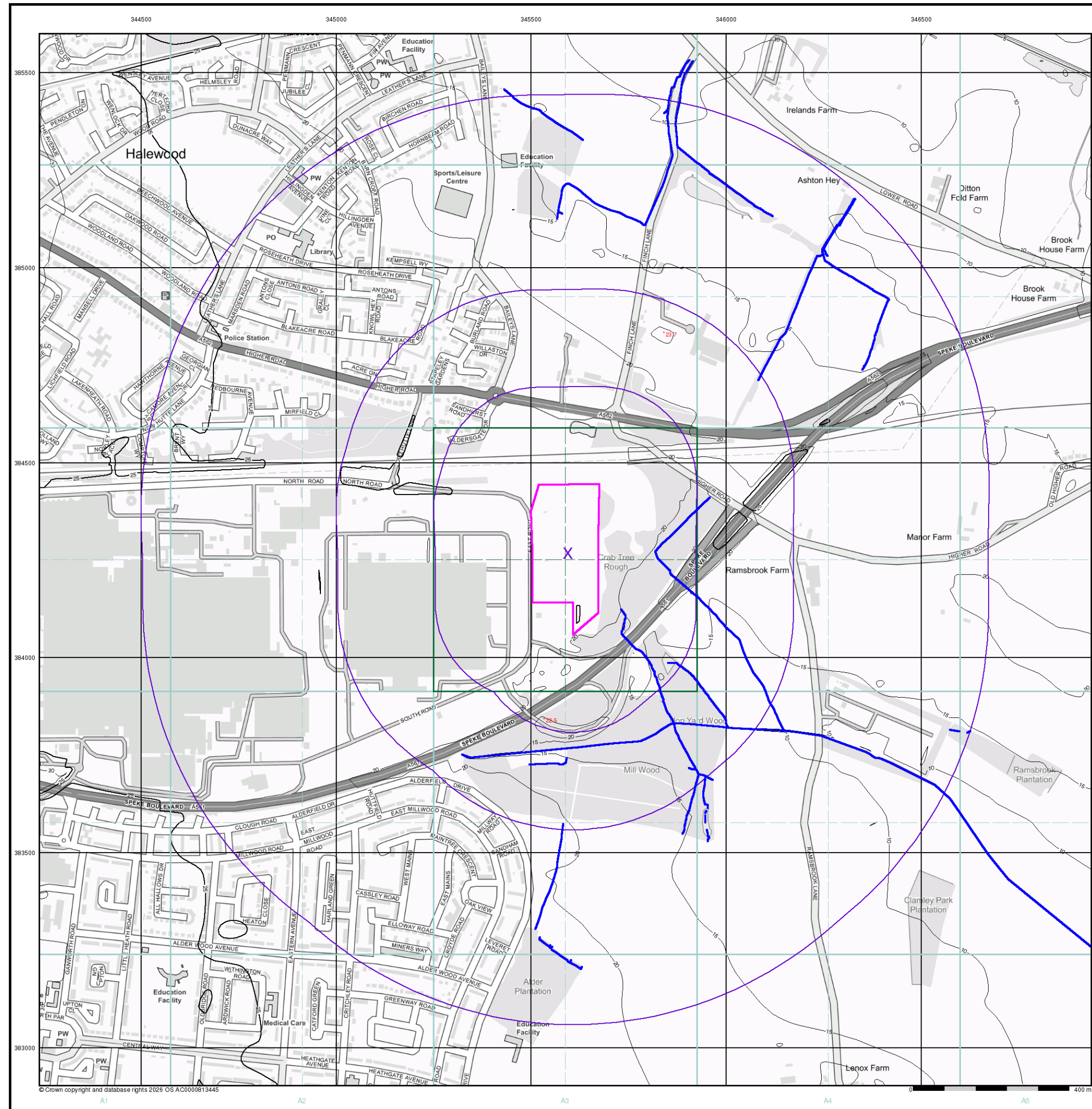


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

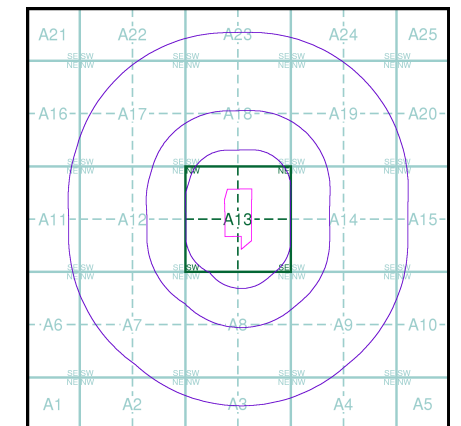
OS Water Network Data

- | | |
|--------------|-------------------------|
| Canal | Drain |
| Reservoir | Other |
| Foreshore | Lake |
| Marsh | Transfer |
| Tidal River | Lock Or Flight Of Locks |
| Inland River | Sea |

Contours (height in meters)

- Standard Contour 105 100 95
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

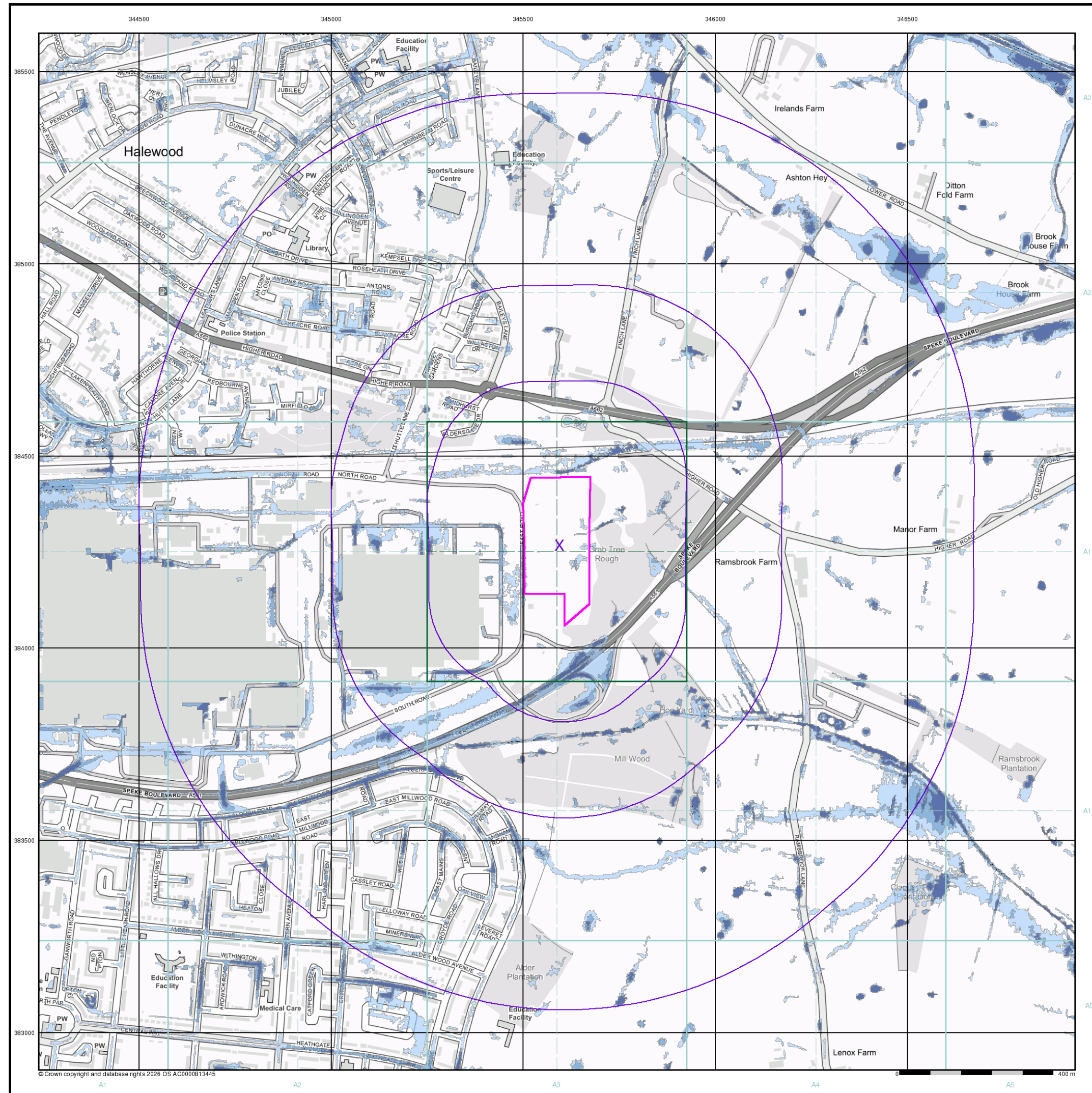
Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water

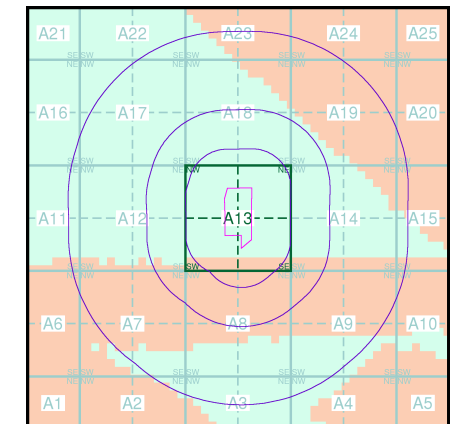
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

E/NRW Suitability Map - Slice A

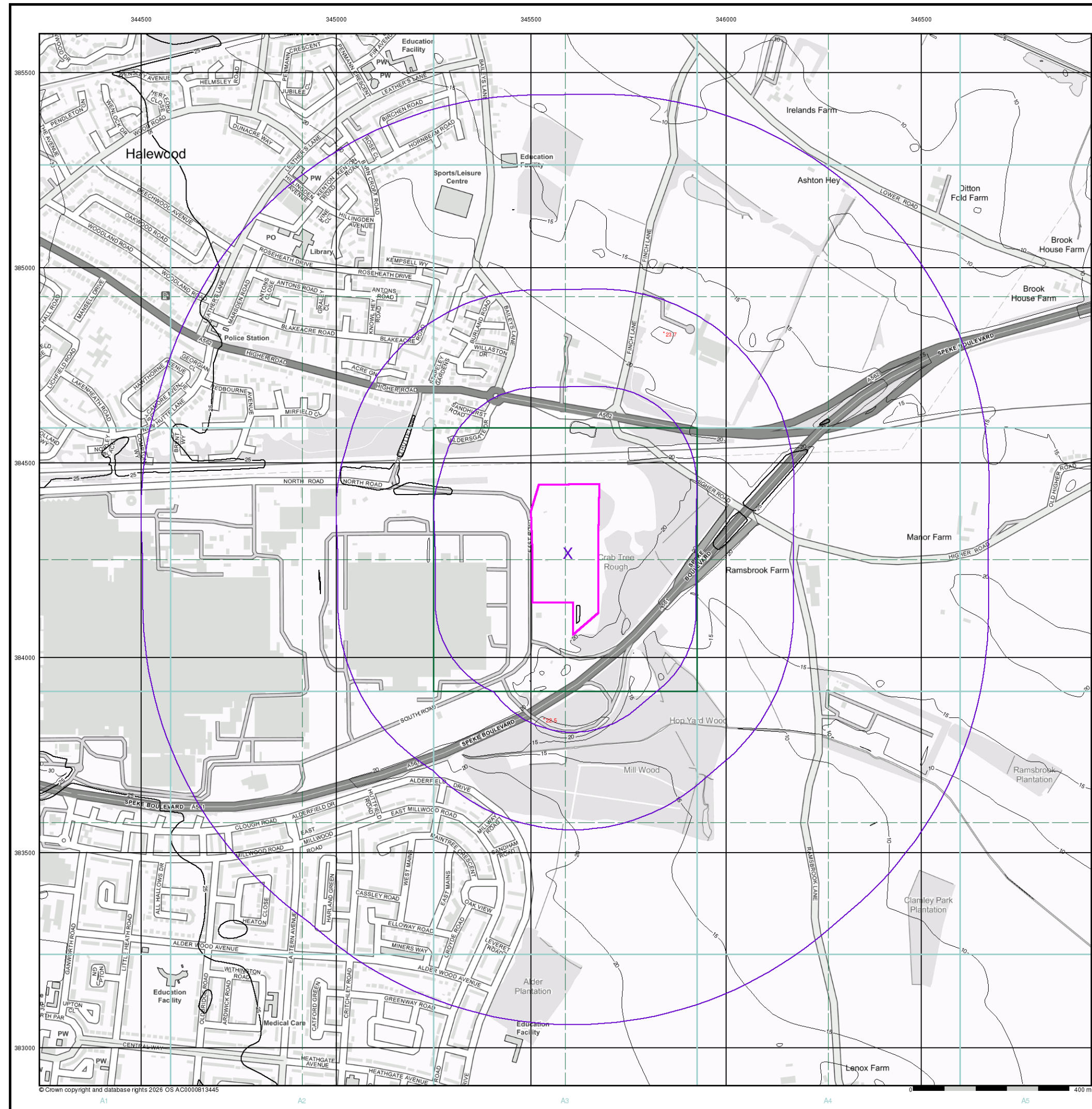


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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WFD Surface Waters Map

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

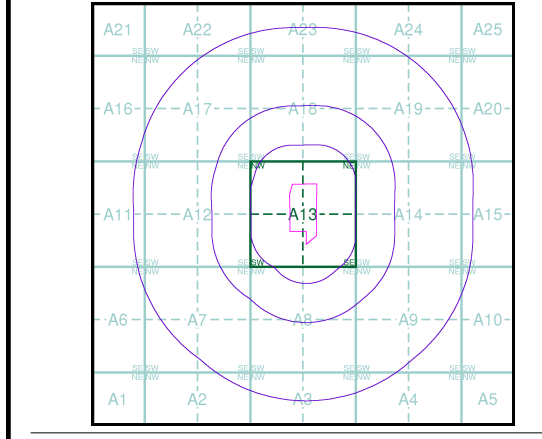
Water Framework Directive - Surface Water Quality

- High
- Good
- Moderate
- Poor
- Bad

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height
- Mean Low Water (MLW)
- Mean High Water (MHW)

WFD Surface Waters Map - Slice A

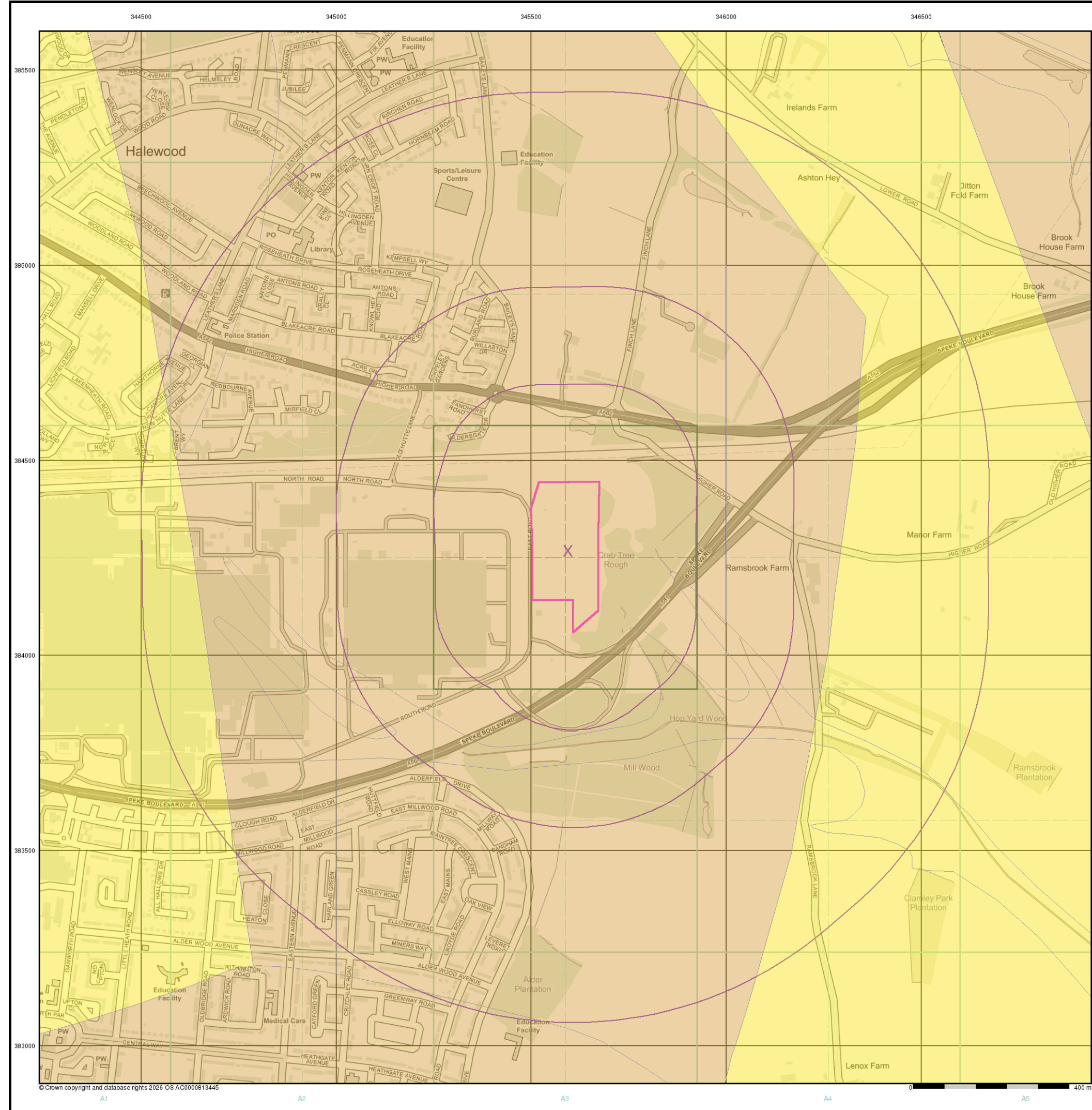


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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A1 A2 A3 A4 A5

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General

📍 Specified Site 📏 Specified Buffer(s) ✕ Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

< 15
15 - 25
25 - 35
35 - 45
45 - 60
60 - 120
> 120

Estimated Soil Chemistry Arsenic - Slice A

Order Details

Order Details:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	1000

Site Details

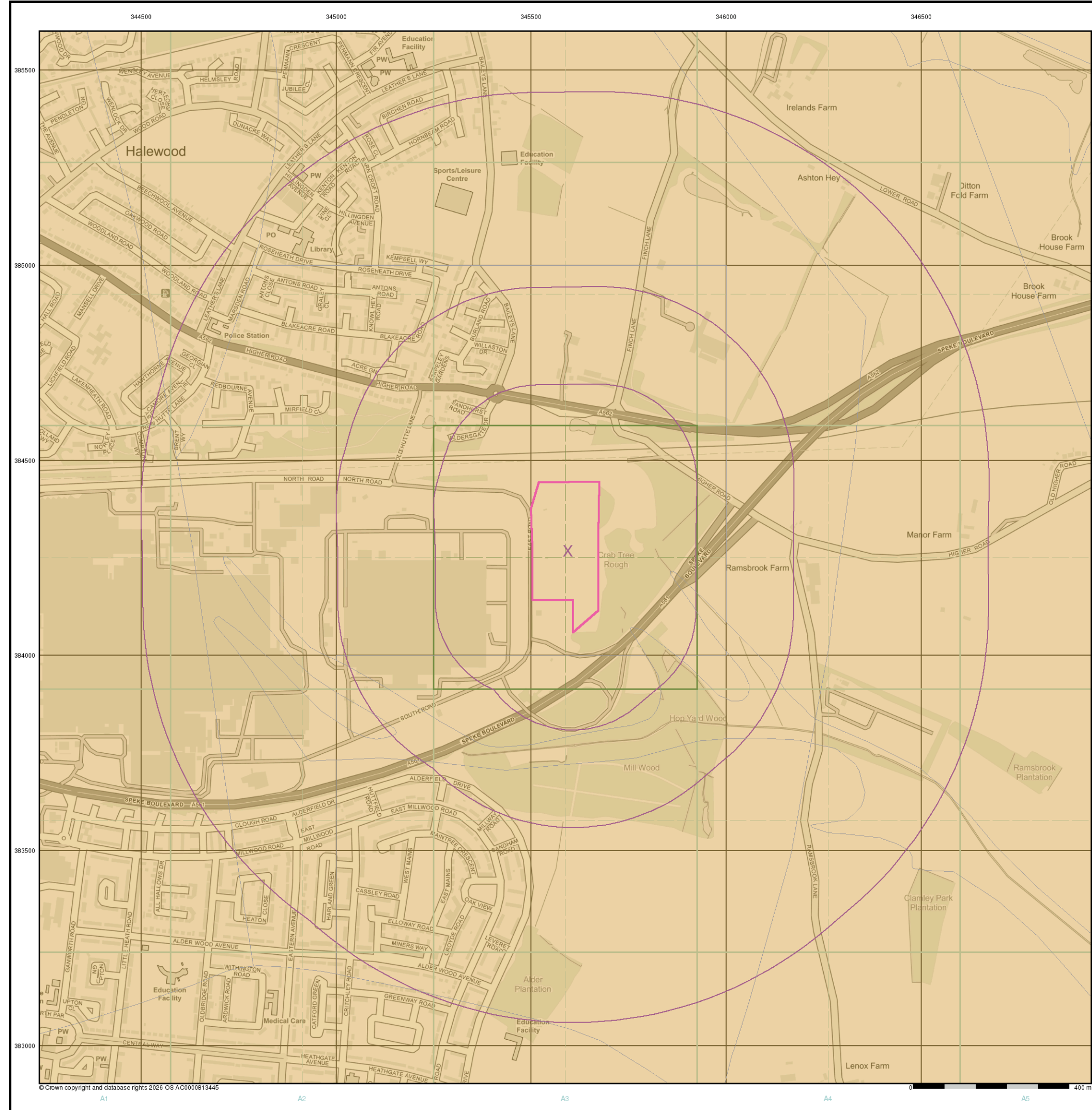
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General

📍 Specified Site 📏 Specified Buffer(s) ✕ Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

	< 1.8
	1.8 - 2.2
	2.2 - 3.0
	> 3.0

Estimated Soil Chemistry Cadmium - Slice A

Order Details

Order Details:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	1000

Site Details

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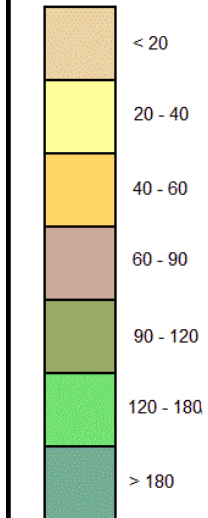
© Crown copyright and database rights 2026 OS AC0000813445

General

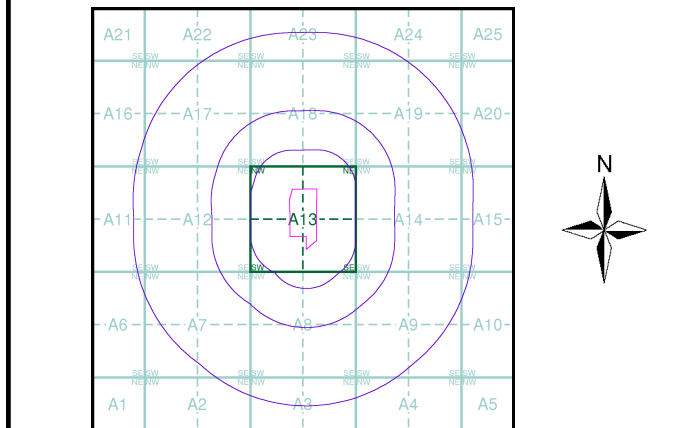
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A

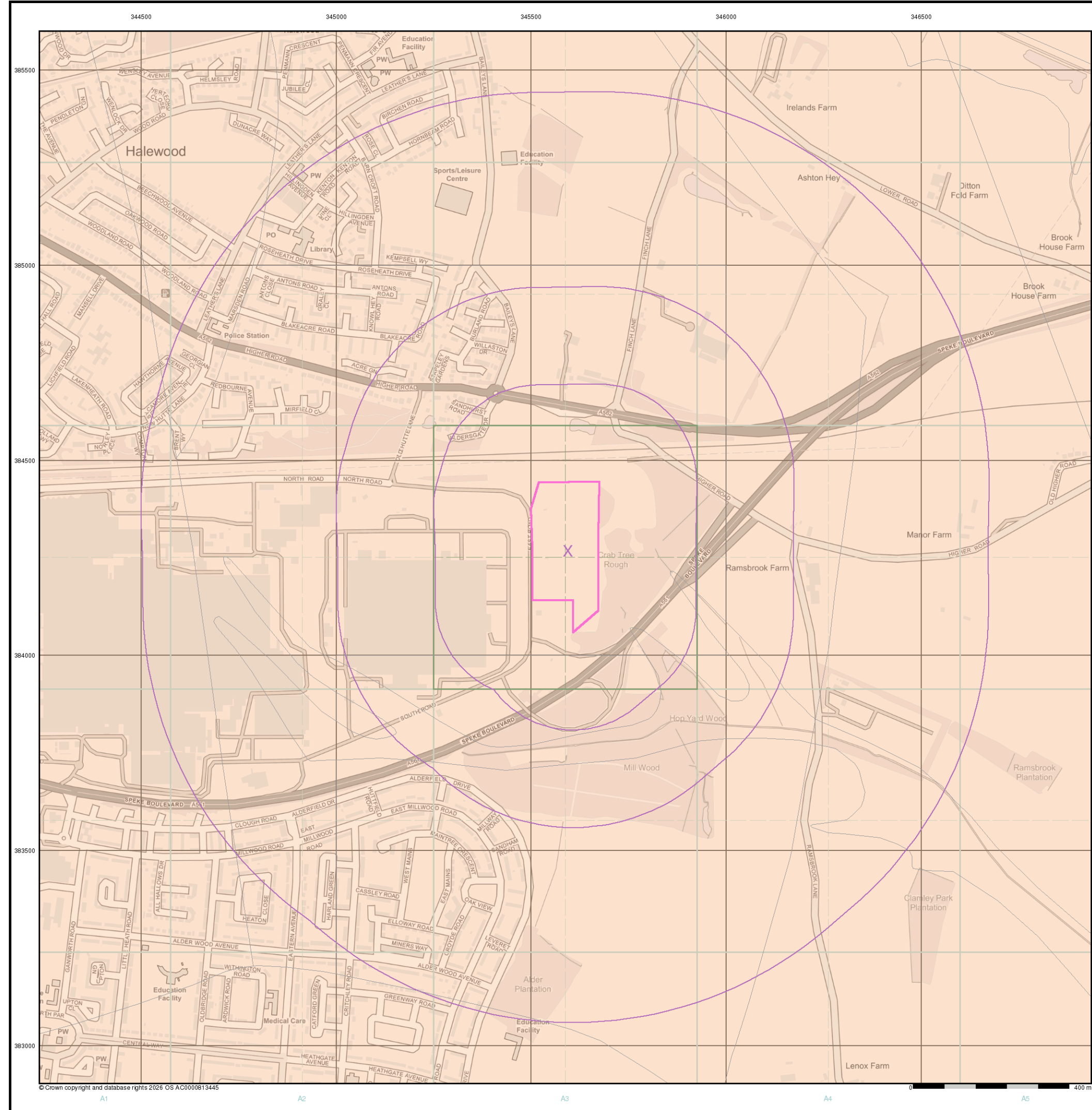


Order Details

Order Details: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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General

📍 Specified Site 📏 Specified Buffer(s) ✕ Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

Orange	<100 mg/kg
Green	100 - 200
Purple	200 - 300
Brown	300 - 600
Blue	600 - 1200
Cyan	>1200

Estimated Soil Chemistry Lead - Slice A

Order Details

Order Details:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	1000

Site Details

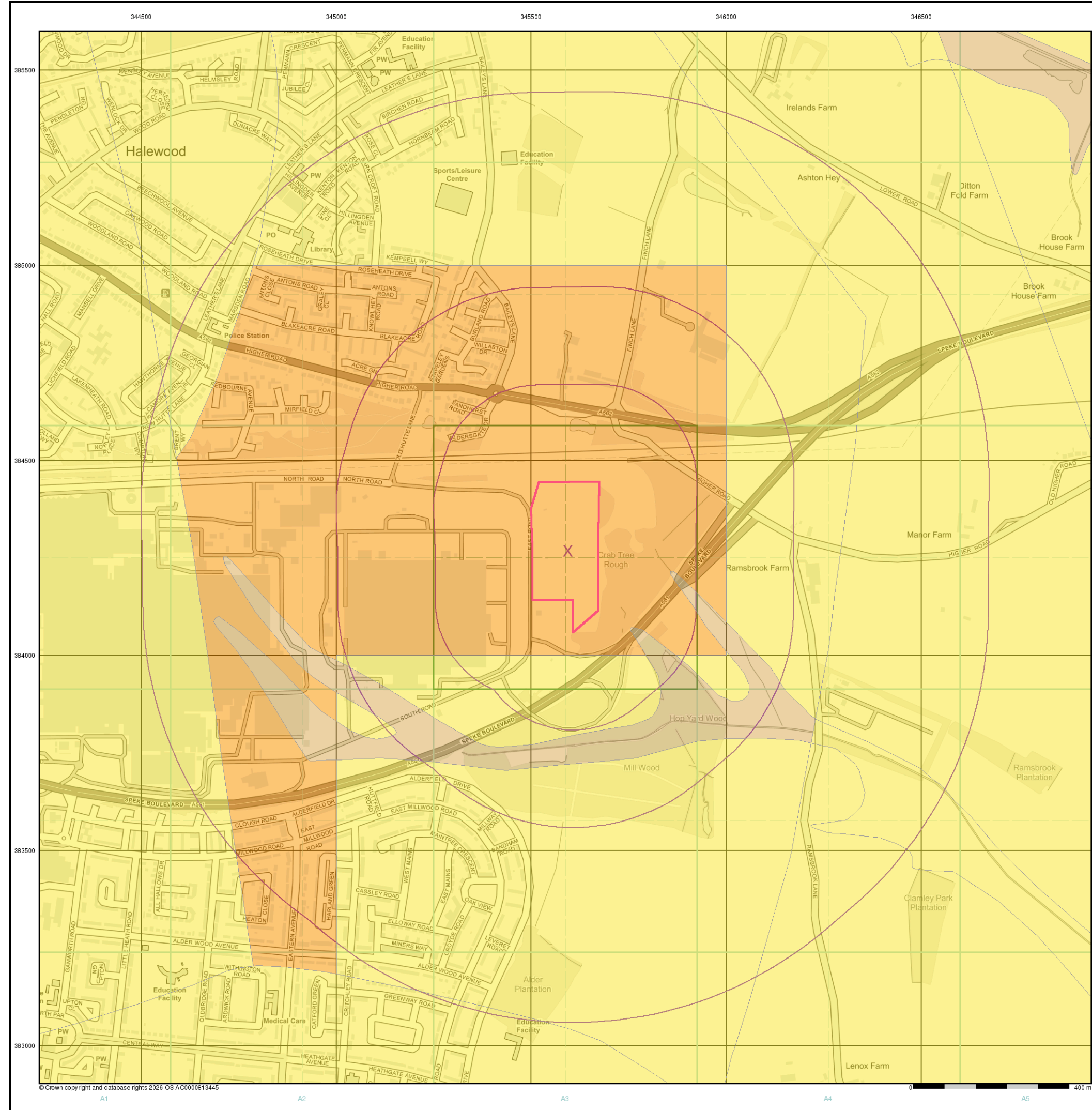
Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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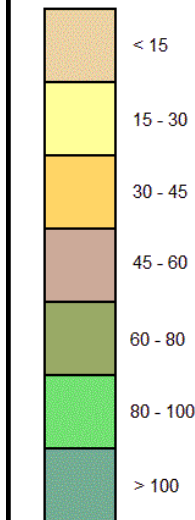
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General

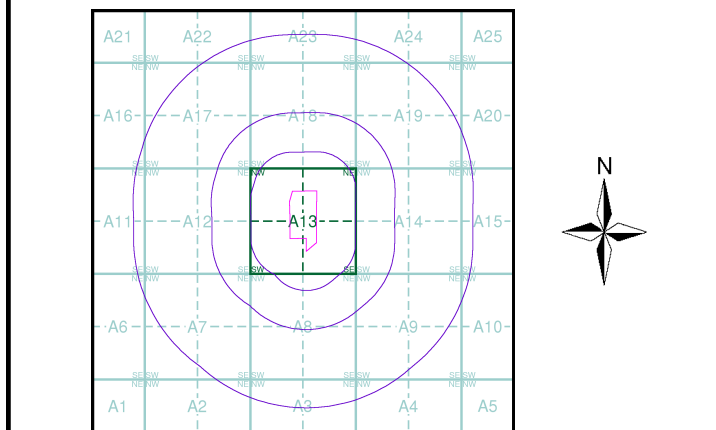
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A

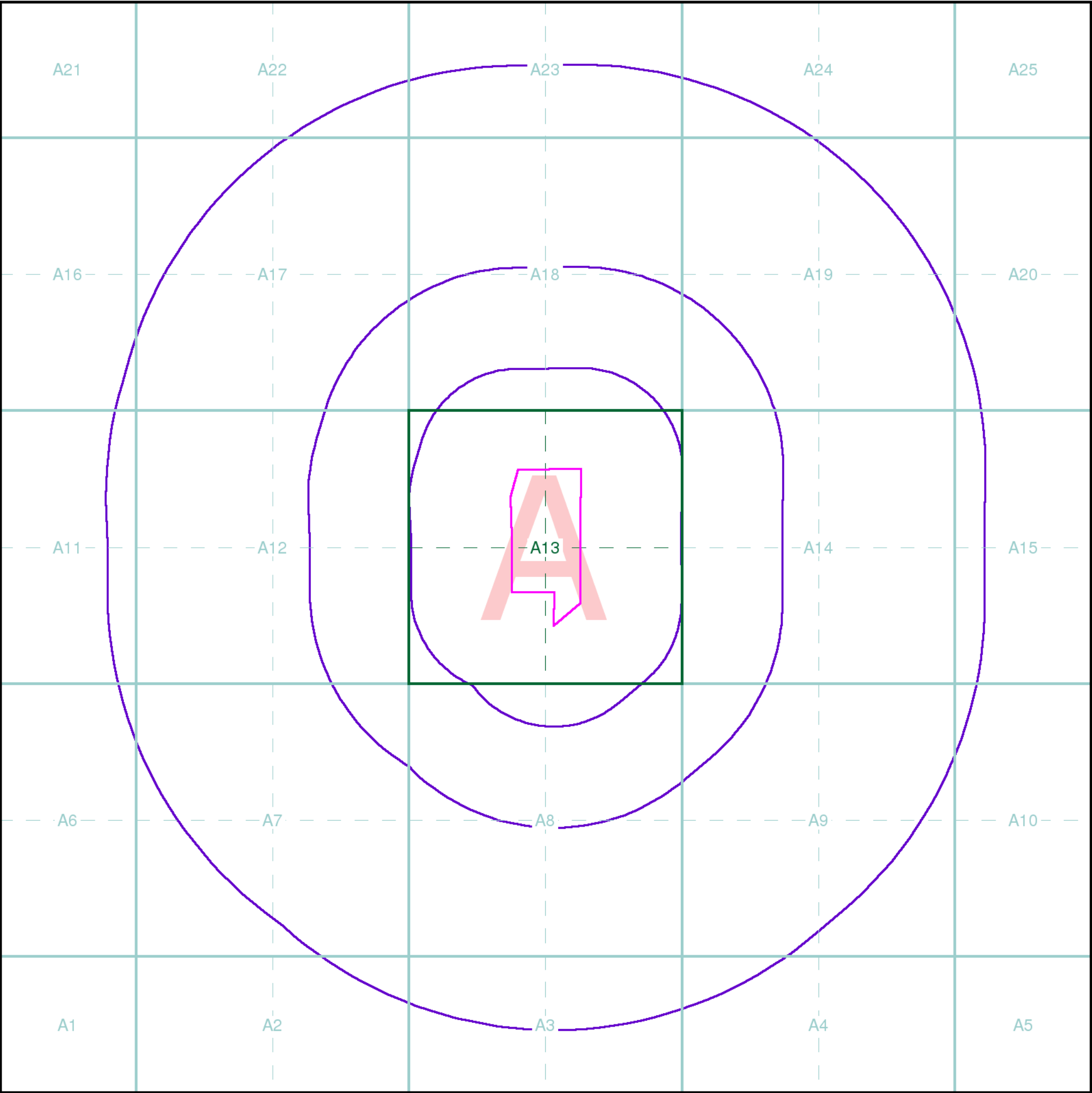


Order Details

Order Details: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr O'Leary, Landwise Consulting Ltd, 43 Buchanan Drive, Cambuslang, GLASGOW, G72 8BD

Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384280
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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<http://www.landmarkinfo.co.uk/Terms/Show/515>

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

393191569_1_1

Customer Reference:

LW25-136

National Grid Reference:

345590, 384270

Slice:

A

Site Area (Ha):

5.46

Search Buffer (m):

1000

Site Details:

Jaguar Land Rover, Halewood

Liverpool

L24 9BJ

Client Details:

Mr O'Leary

Landwise Consulting Ltd

43 Buchanan Drive

Cambuslang

GLASGOW

G72 8BD

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	-
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	1
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	2
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	5
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	6
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	8
Data Suppliers	9
Useful Contacts	10

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The brine subsidence data relating to the Droitwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites					
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability			n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 1	3	3	n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying					
Heap, unknown constituents					
Mineral Railway					
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits					
Former Marshes					
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)	pg 2	1	2	16	38
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 5	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 5	Yes		n/a	n/a
Salt Mining Related Features					

Report Version v53.0

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13NE (N)	0	2	345603 384331
2	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13NE (NE)	0	2	345628 384313
3	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13NE (NE)	0	2	345602 384280
4	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13SE (SE)	43	2	345719 384180
5	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13SE (SE)	64	2	345736 384174
6	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1966 Date: Last Map Published N/A Date:	A13SE (SE)	69	2	345740 384095

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NW (NW)	0	2	345539 384353
8	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SW (SW)	18	2	345516 384124
9	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A13SW (W)	250	2	345254 384231
10	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A18SE (N)	255	2	345668 384700
11	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (NW)	298	2	345347 384685
12	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	307	2	345450 384742
13	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A18SW (N)	317	2	345571 384760
14	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	333	2	345462 384771
15	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A18SW (NW)	339	2	345303 384704
16	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	343	2	345249 383912
17	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (NW)	356	2	345267 384693
18	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (E)	367	2	346039 384334
19	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12NE (W)	374	2	345128 384327
20	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (E)	374	2	346045 384305
21	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SW (N)	375	2	345574 384819
22	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NW (SW)	414	2	345273 383793
23	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SE (SW)	416	2	345113 384001
24	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SE (NW)	433	2	345239 384773
25	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	472	2	345113 383877
26	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7NE (SW)	523	2	345071 383848
27	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A12SE (W)	541	2	344974 384035

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NW (SW)	545	2	345268 383633
29	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A17SE (NW)	578	2	345113 384854
30	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SE (NW)	581	2	344981 384661
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NE (W)	586	2	344917 384302
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12NE (W)	592	2	344928 384526
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8SW (S)	593	2	345404 383501
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NW (NE)	597	2	346255 384581
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A17SE (NW)	607	2	344934 384604
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NW (W)	619	2	344891 384483
37	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A12NW (W)	644	2	344860 384445
38	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	647	2	345216 385014
39	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	709	2	345035 384960
40	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8SW (S)	710	2	345352 383396
41	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	716	2	345047 384981
42	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	726	2	345057 385002
43	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7SE (SW)	741	2	345192 383445
44	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SW (NW)	747	2	344853 384780
45	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8SW (S)	790	2	345461 383283
46	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	794	2	344776 383824
47	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A17SW (NW)	797	2	344812 384808
48	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A7SE (SW)	830	2	345202 383335

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	844	2	344719 383833
50	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A23SW (N)	866	2	345330 385288
51	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	874	2	344695 383813
52	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NE (NW)	879	2	345154 385242
53	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (W)	898	2	344636 383912
54	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	903	2	344670 383795
55	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17SW (NW)	904	2	344699 384821
56	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A7NW (SW)	905	2	344749 383643
57	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SW (W)	907	2	344598 384107
58	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1928	A12NW (W)	918	2	344582 384369
59	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7NW (SW)	932	2	344755 383587
60	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A3NW (S)	936	2	345426 383141
61	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A17NW (NW)	967	2	344710 384970
62	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A19NW (NE)	985	2	346233 385256
63	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A7SW (SW)	988	2	344723 383537

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
64	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	3	345753 384070
65	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	3	345753 384070
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269
66	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269
67	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269
68	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	3	345753 384070
69	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	3	345595 384269

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Lancashire And Furness	114_10	1893
Lancashire And Furness	114_11	1893
Lancashire And Furness	114_10	1907
Lancashire And Furness	114_11	1907
Lancashire And Furness	114_10	1927
Lancashire And Furness	114_11	1927
Lancashire And Furness	114_10	1936
Ordnance Survey Plan	SJ4583	1955

The following mapping has been analysed for Historical Land Use Information (1:10,000):

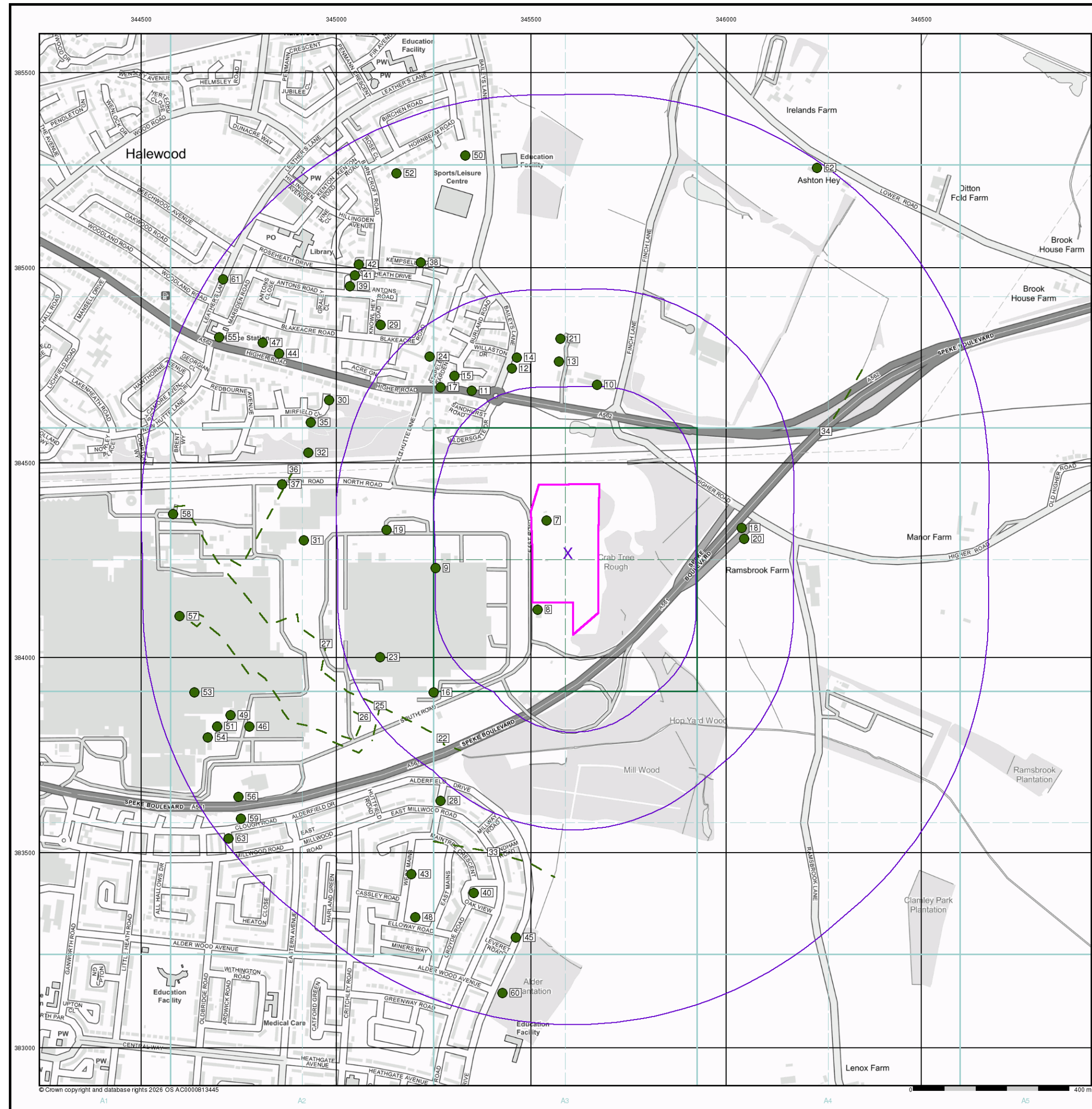
1:10,560	Mapsheet	Published Date
Lancashire And Furness	114_00	1849
Cheshire	014_00	1881
Cheshire	015_00	1881
Cheshire	023_00	1881
Cheshire	024_00	1882
Lancashire And Furness	114_SW	1894
Lancashire And Furness	114_SE	1896
Cheshire	014_SE	1899
Cheshire	015_SW	1899
Cheshire	023_NE	1899
Cheshire	024_NW	1899
Lancashire And Furness	114_SE	1908
Lancashire And Furness	114_SW	1908
Cheshire	015_SW	1911
Cheshire	023_NE	1912
Cheshire	024_NW	1912
Lancashire And Furness	114_SE	1928
Lancashire And Furness	114_SW	1928
Cheshire	015_SW	1938
Ordnance Survey Plan	SJ48SE	1954
Ordnance Survey Plan	SJ48NE	1955
Ordnance Survey Plan	SJ48NW	1956
Ordnance Survey Plan	SJ48SW	1956
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SJ48NW	1982
Ordnance Survey Plan	SJ48SE	1984
Ordnance Survey Plan	SJ48NE	1990
Ordnance Survey Plan	SJ48SW	1992

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2025	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	
Man Made Mining Cavities Stantec UK Ltd	May 2025	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	May 2025	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	July 2023	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	 The Coal Authority
Ove Arup	
Stantec UK Ltd	 Stantec
Wardell Armstrong	 wardell armstrong your earth our world
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	
2	Landmark Information Group Limited Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	
3	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	
-	Landmark Information Group Limited Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	



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Historical Land Use Information (1:10,000)

General

Specified Site Specified Buffer(s) X Bearing Reference Point Map ID
Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

Historical Land Use

	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

Mining Data

Potential Mining Area
 BGS Recorded Mineral Site

Mining and Ground Stability - Slice A

Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

A Landmark Information Group Service v50.0 12-Jan-2026 Page 1 of 1



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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Potential for Compressible Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Collapsible Ground Stability Hazards

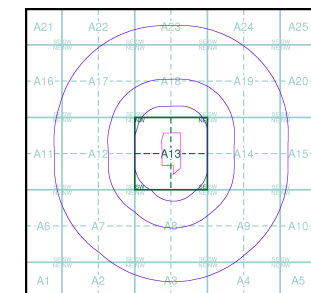
- High
- Moderate
- Low
- Very Low

Brine Pumping and Salt Mining

- Brine Pumping Related Feature
- Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice A



Order Details

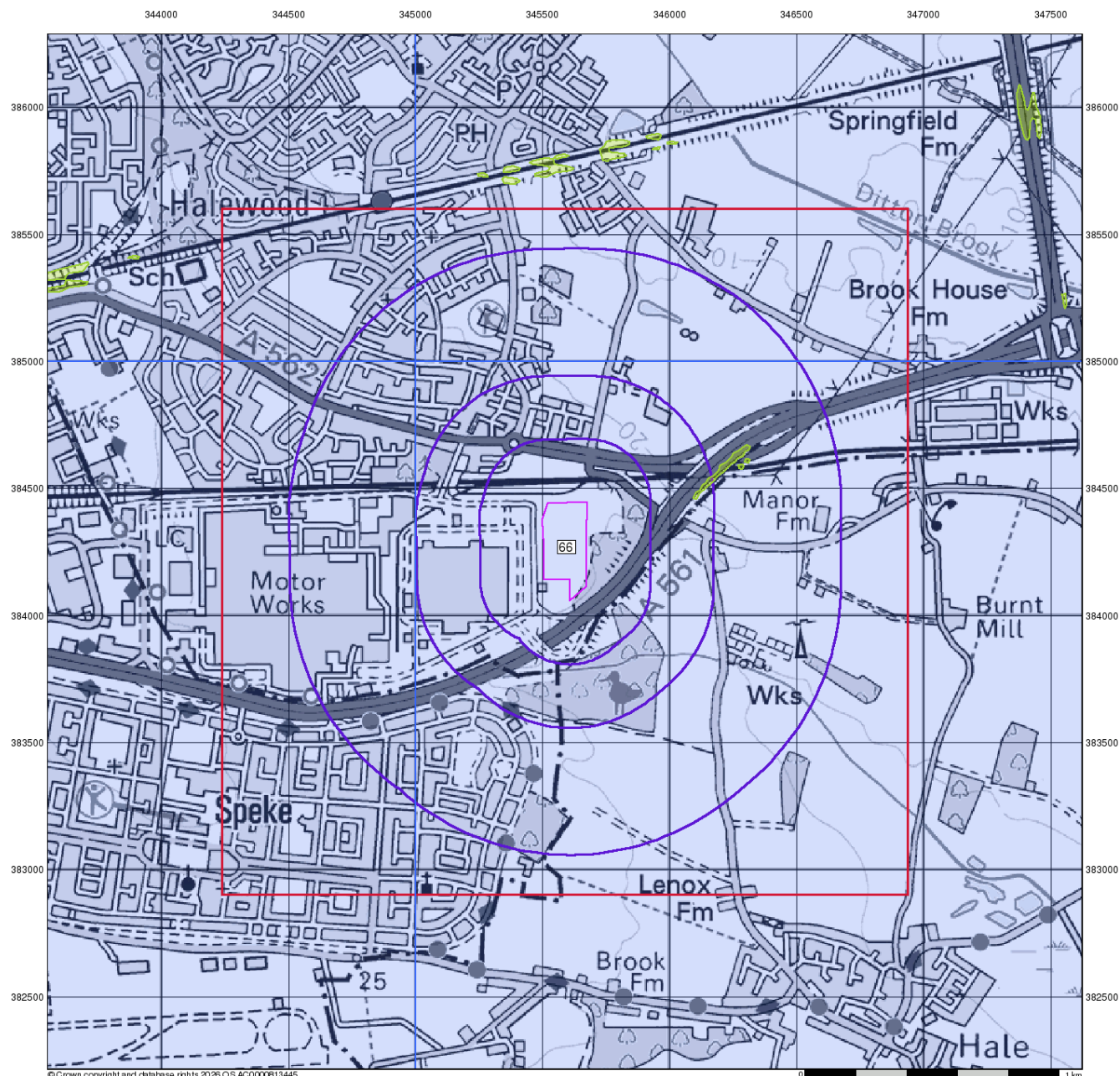
Order Number: 393191569_1_1
 Customer Ref: LW25-136
 National Grid Reference: 345590, 384270
 Slice: A
 Site Area (Ha): 5.46
 Search Buffer (m): 1000

Site Details

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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

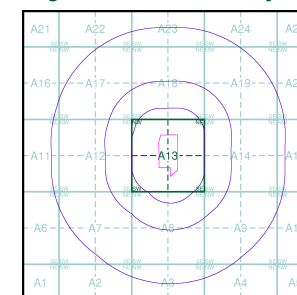
Potential for Landslide Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Ground Dissolution Stability Hazards

- High
- Moderate
- Low
- Very Low

Mining and Ground Stability - Slice A



Order Details

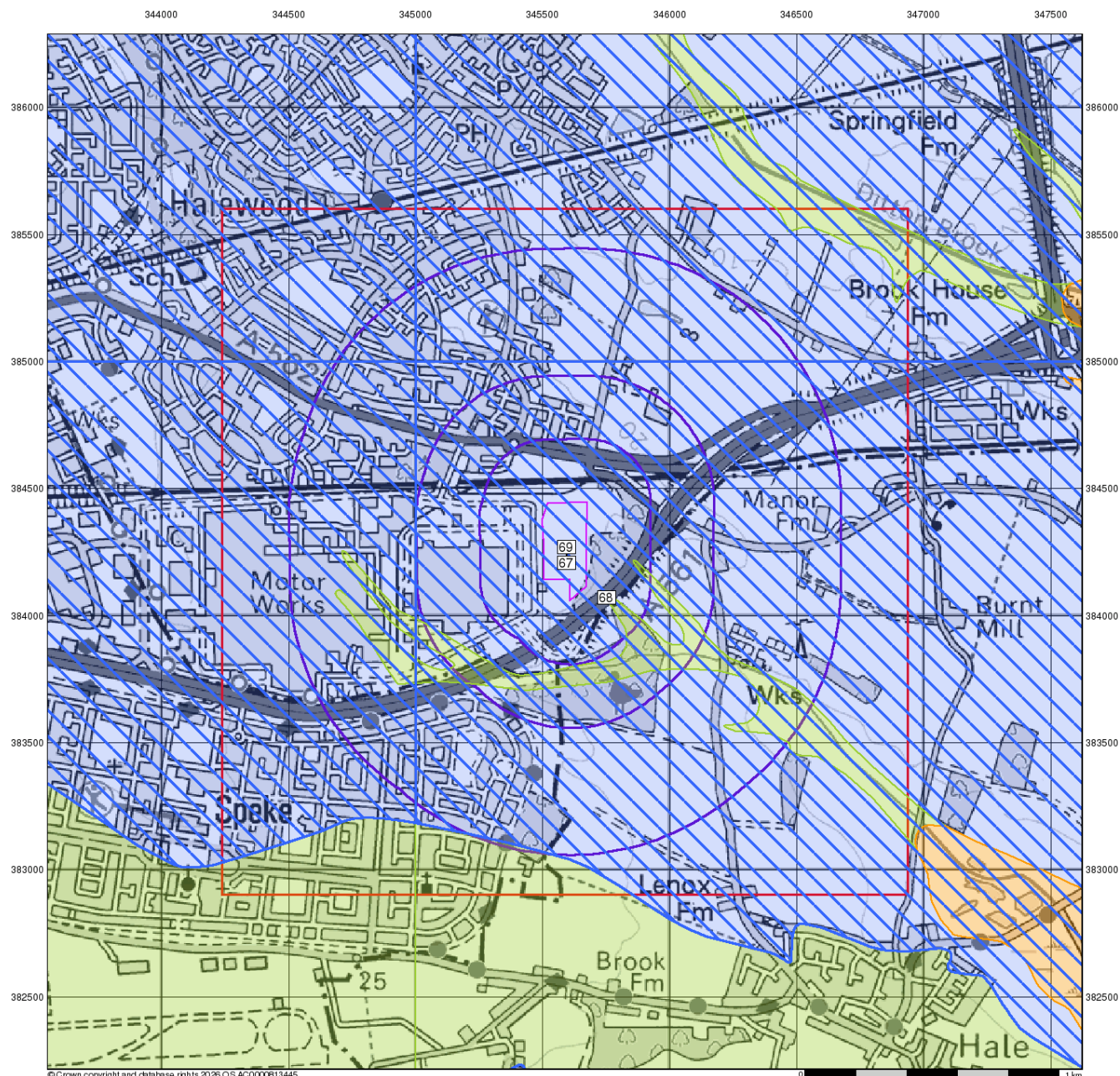
Order Number: 393191569_1_1
 Customer Ref: LW25-136
 National Grid Reference: 345590, 384270
 Slice: A
 Site Area (Ha): 5.46
 Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

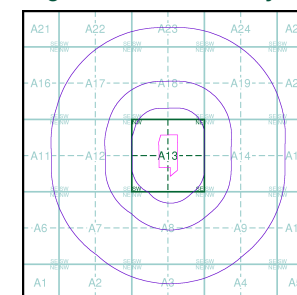
Potential for Running Sand Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Mining and Ground Stability - Slice A



Order Details

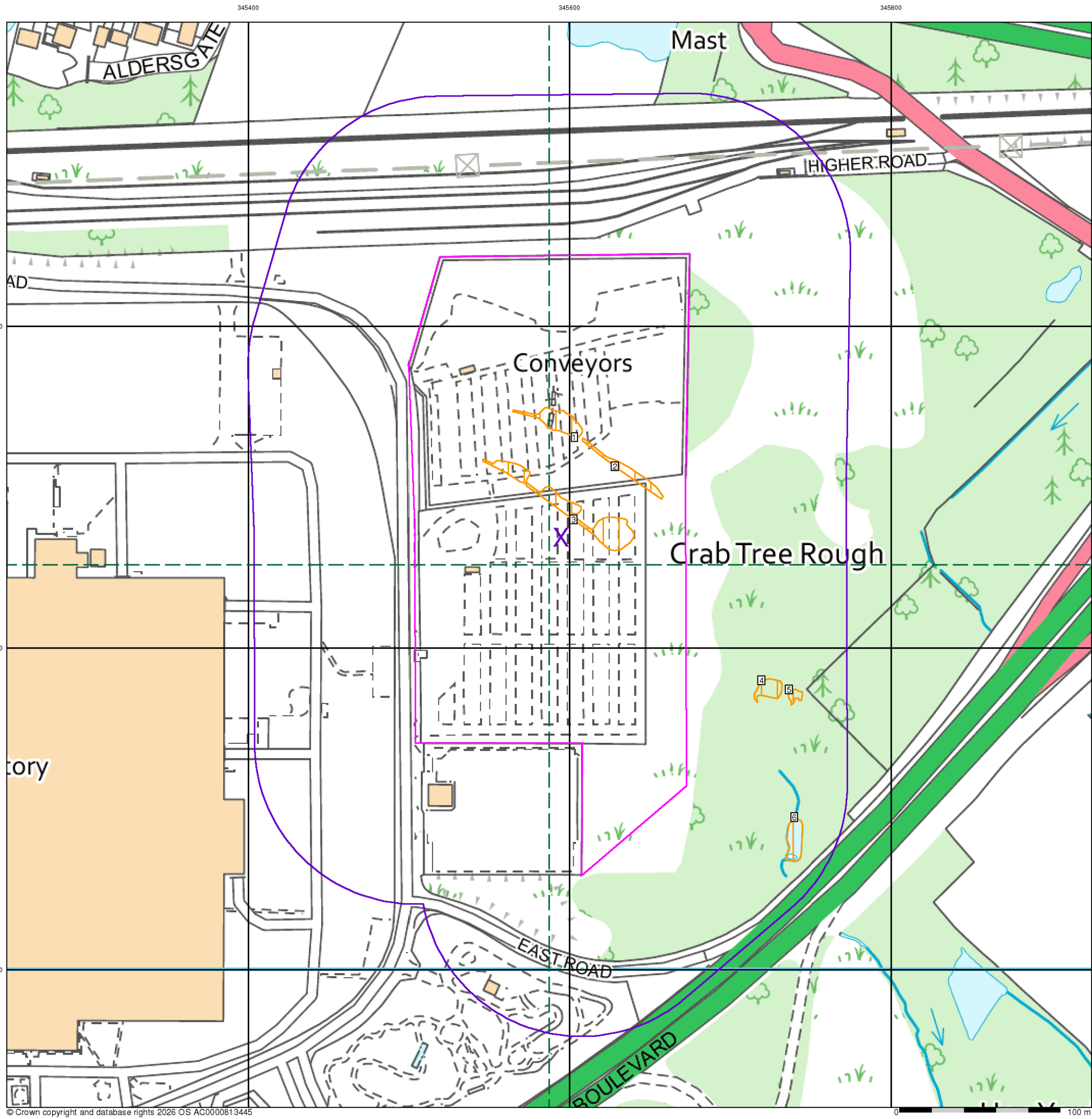
Order Number: 393191569_1_1
 Customer Ref: LW25-136
 National Grid Reference: 345590, 384270
 Slice: A
 Site Area (Ha): 5.46
 Search Buffer (m): 1000

Site Details

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Historical Land Use Information (1:2,500)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

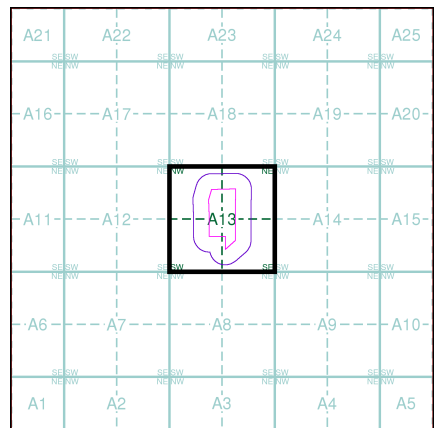
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A13



Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Plot Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



Large-Scale National Grid Data 1:2,500 and 1:1,250



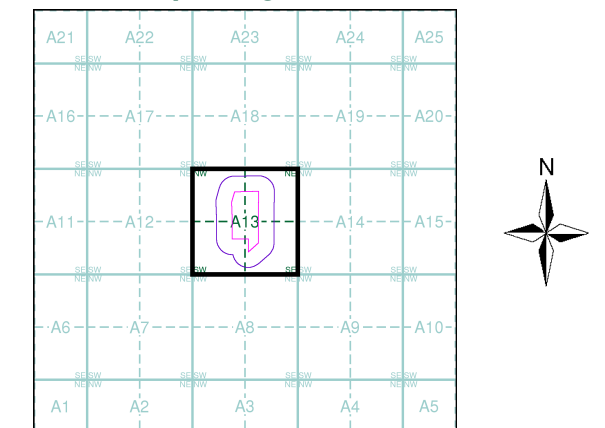
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1893	2
Lancashire And Furness	1:2,500	1907	3
Lancashire And Furness	1:2,500	1927	4
Lancashire And Furness	1:2,500	1936	5
Ordnance Survey Plan	1:1,250	1954 - 1966	6
Ordnance Survey Plan	1:2,500	1955 - 1968	7
Ordnance Survey Plan	1:1,250	1965	8
Additional SIMs	1:2,500	1971	9
Additional SIMs	1:1,250	1984 - 1991	10
Large-Scale National Grid Data	1:1,250	1993	11
Large-Scale National Grid Data	1:1,250	1994 - 1995	12
Historical Aerial Photography	1:2,500	2000	13

Historical Map - Segment A13



Order Details

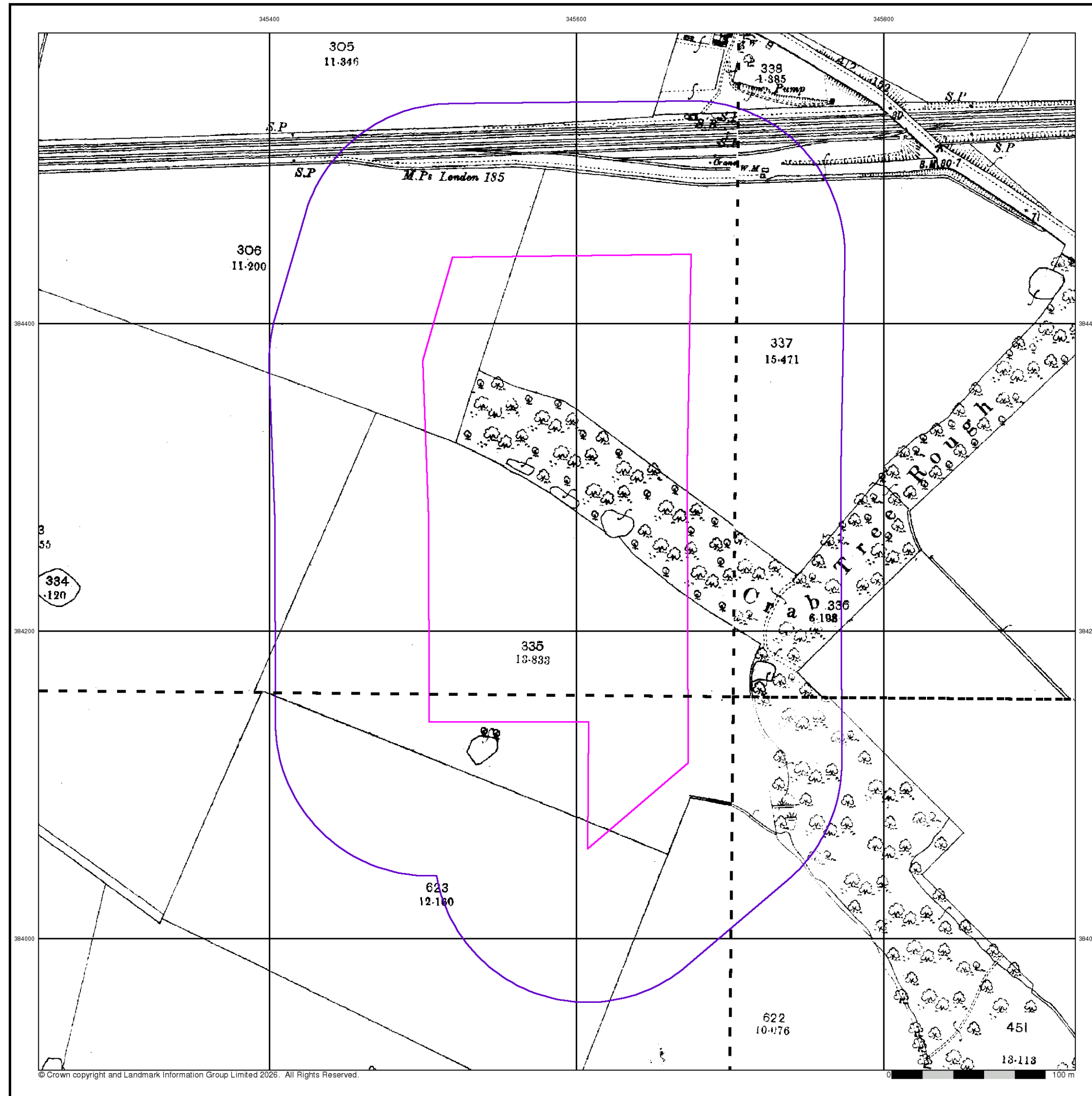
Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

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Lancashire And Furness

Published 1893

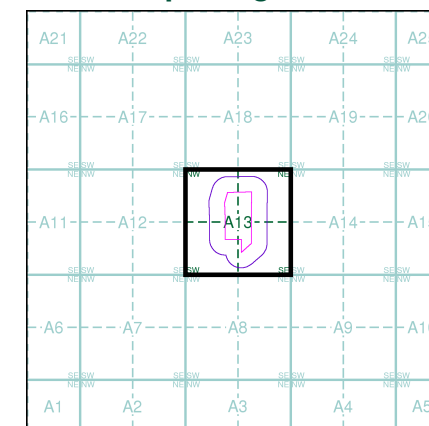
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

114_10 1893 1:2,500	114_11 1893 1:2,500
114_14 1893 1:2,500	114_15 1893 1:2,500

Historical Map - Segment A13



Order Details

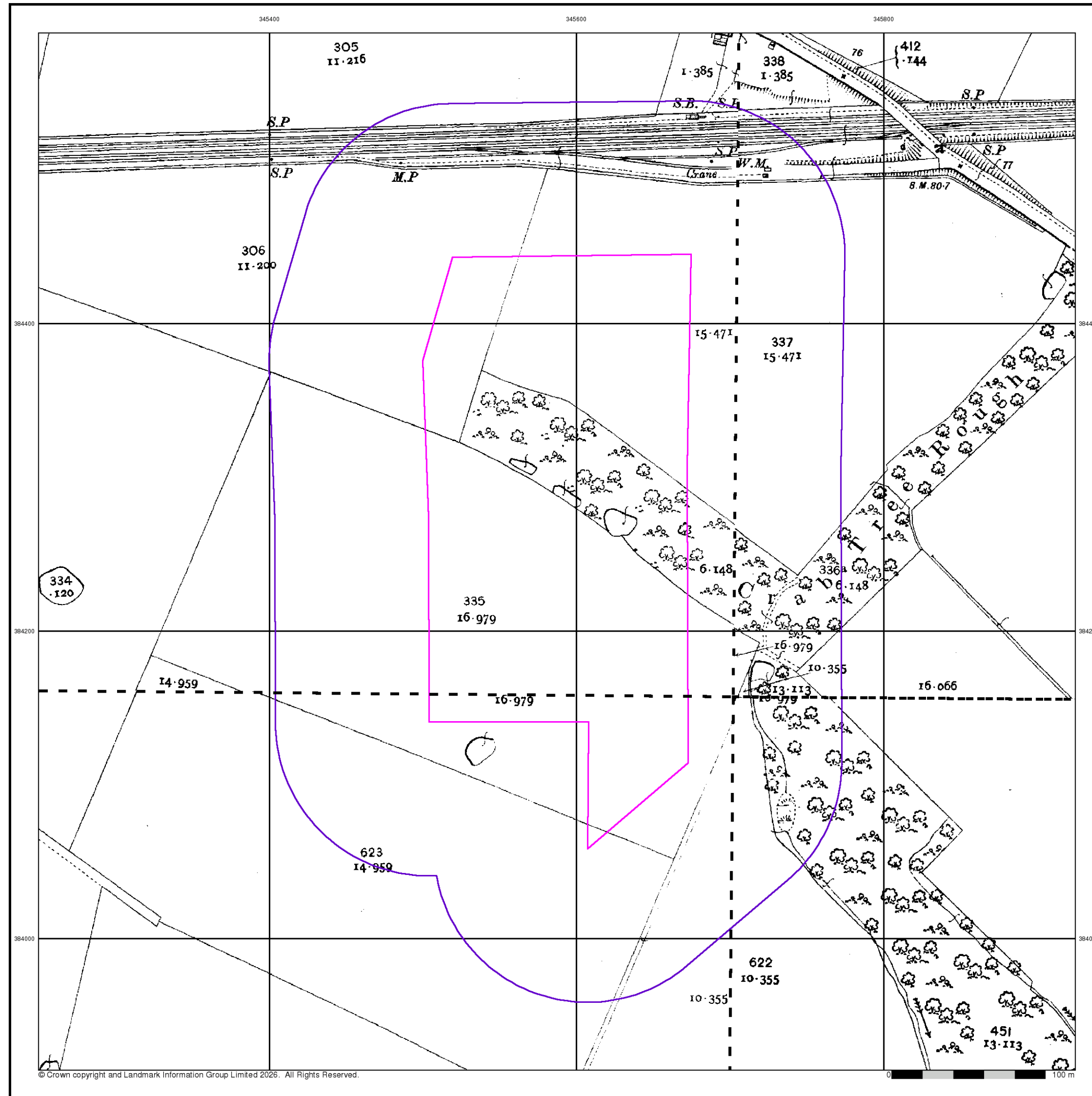
Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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Lancashire And Furness

Published 1907

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

114_10 1907 1:2,500	114_11 1907 1:2,500
114_14 1907 1:2,500	114_15 1907 1:2,500

Historical Map - Segment A13

Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

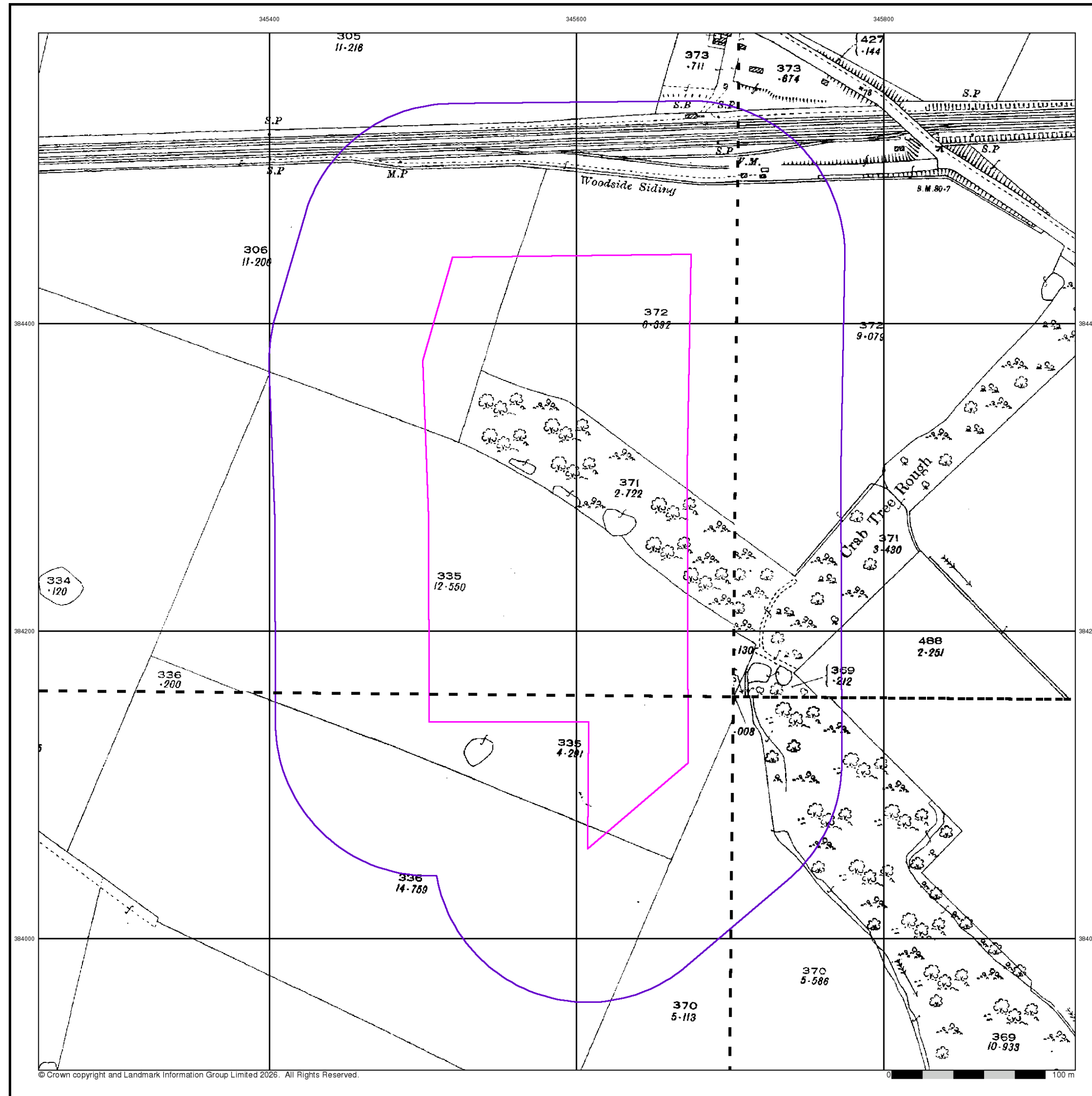
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A Landmark Information Group Service v50.0 12-Jan-2026 Page 3 of 13



Lancashire And Furness

Published 1927

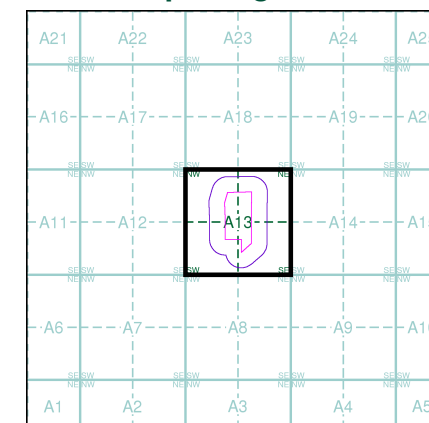
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

114_10 1927 1:2,500	114_11 1927 1:2,500
114_14 1927 1:2,500	114_15 1927 1:2,500

Historical Map - Segment A13

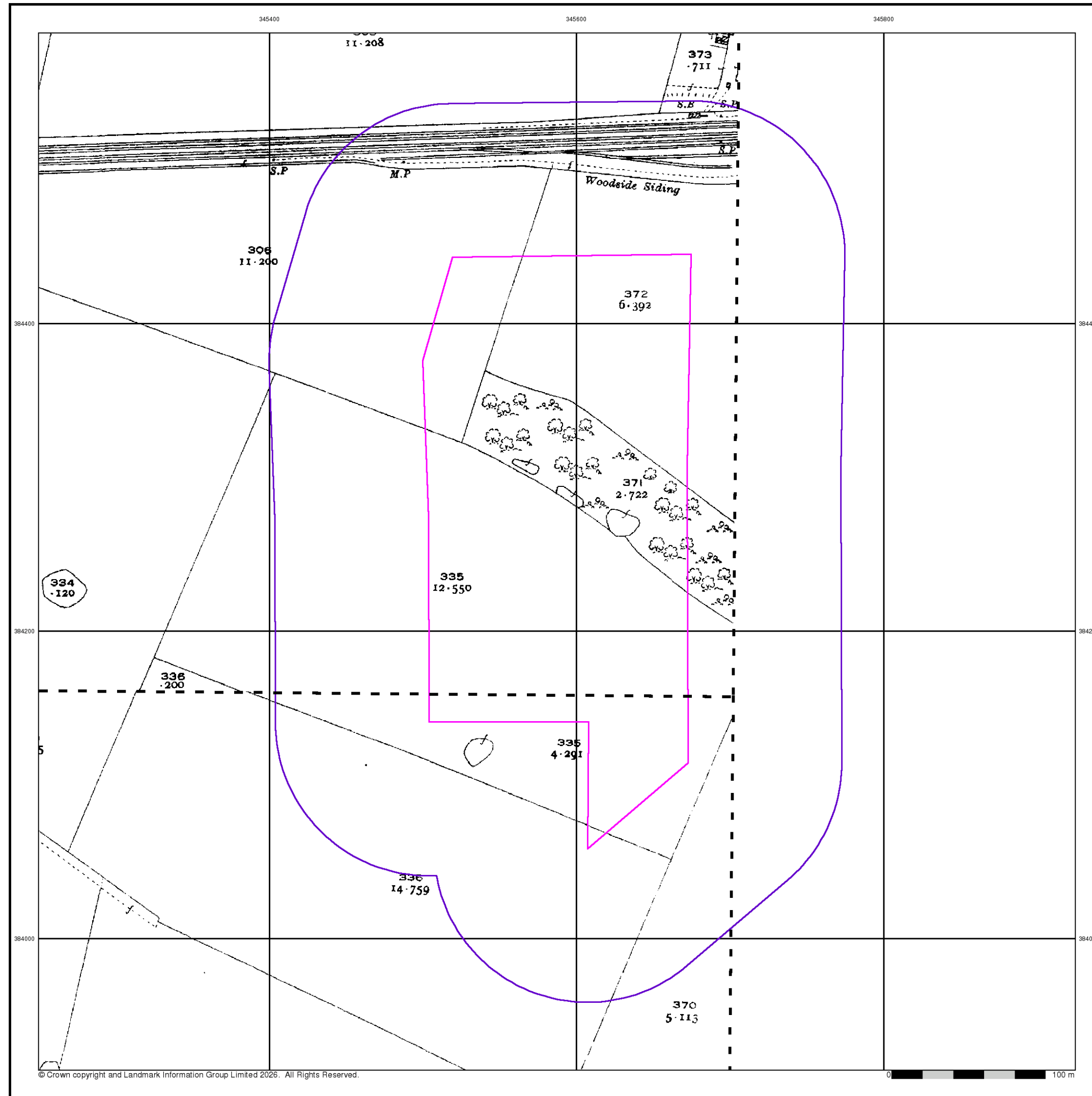


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



Lancashire And Furness

Published 1936

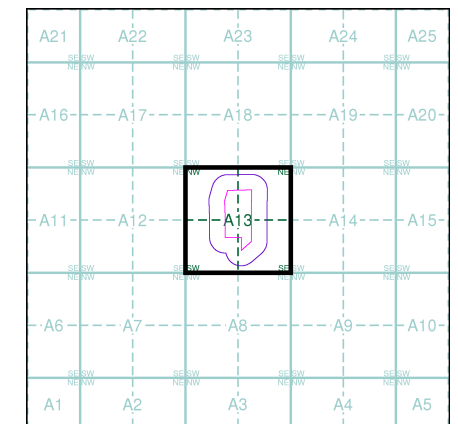
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

114_10 1936 12,500	
114_14 1936 12,500	

Historical Map - Segment A13

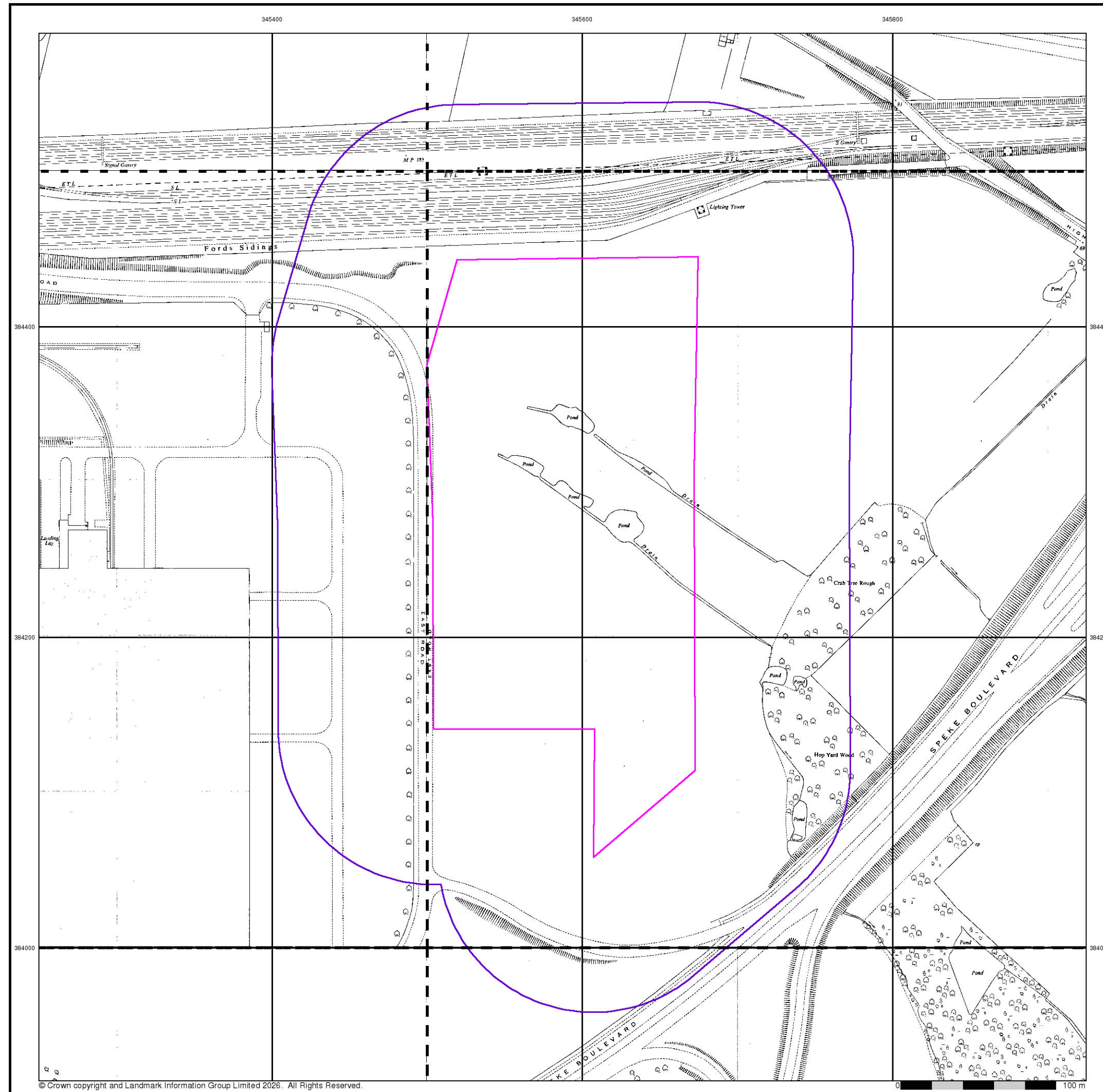


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1954 - 1966

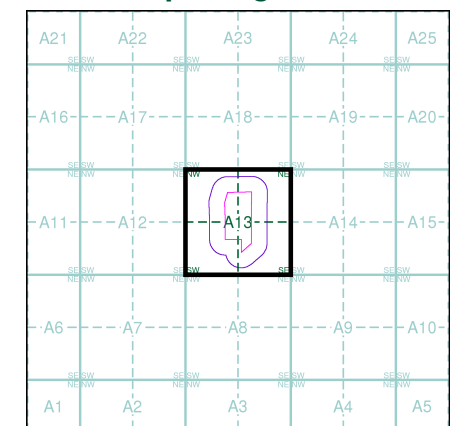
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

J4584NW	J4584NE
1966	1966
1:1,250	1:1,250
J4584SW	J4584SE
1966	1966
1:1,250	1:1,250
J4583NW	J4583NE
1954	1965
1:1,250	1:1,250

Historical Map - Segment A13

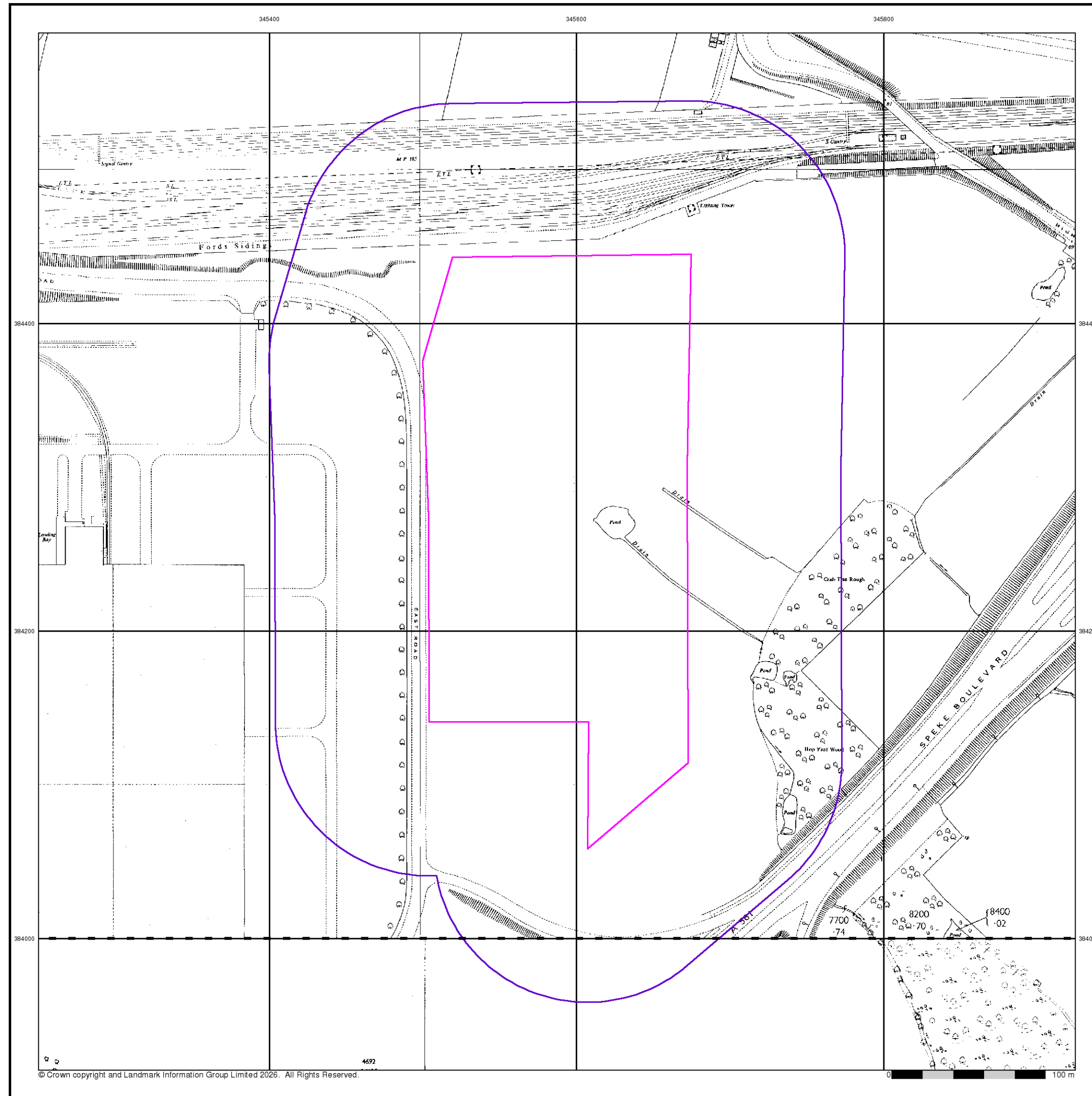


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



Ordnance Survey Plan

Published 1955 - 1968

Source map scale - 1:2,500

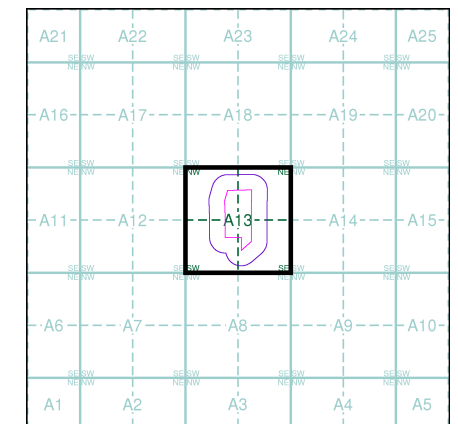
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ4584
1968
1:2,500

SJ4583
1955
1:2,500

Historical Map - Segment A13

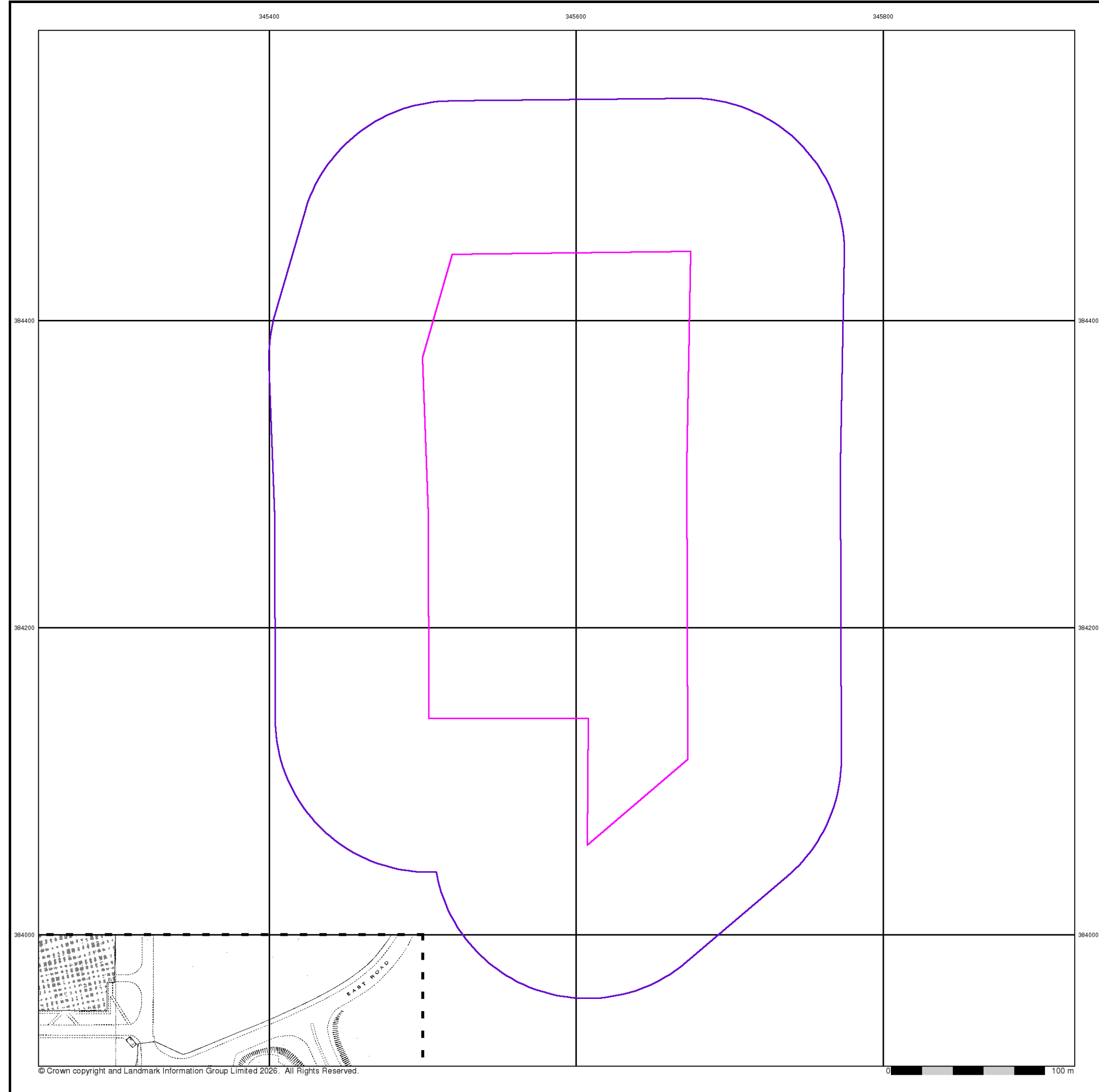


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



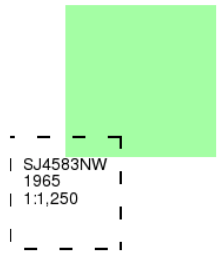
Ordnance Survey Plan

Published 1965

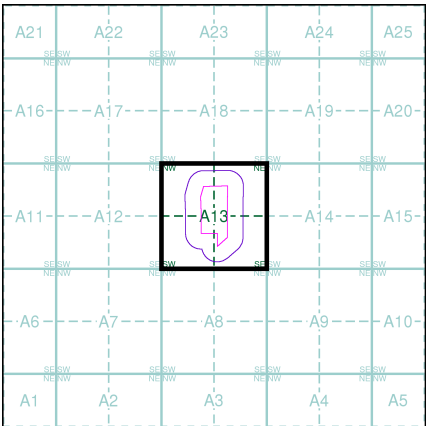
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 393191569_1_1

Customer Ref: LW25-136

National Grid Reference: 345590, 384270

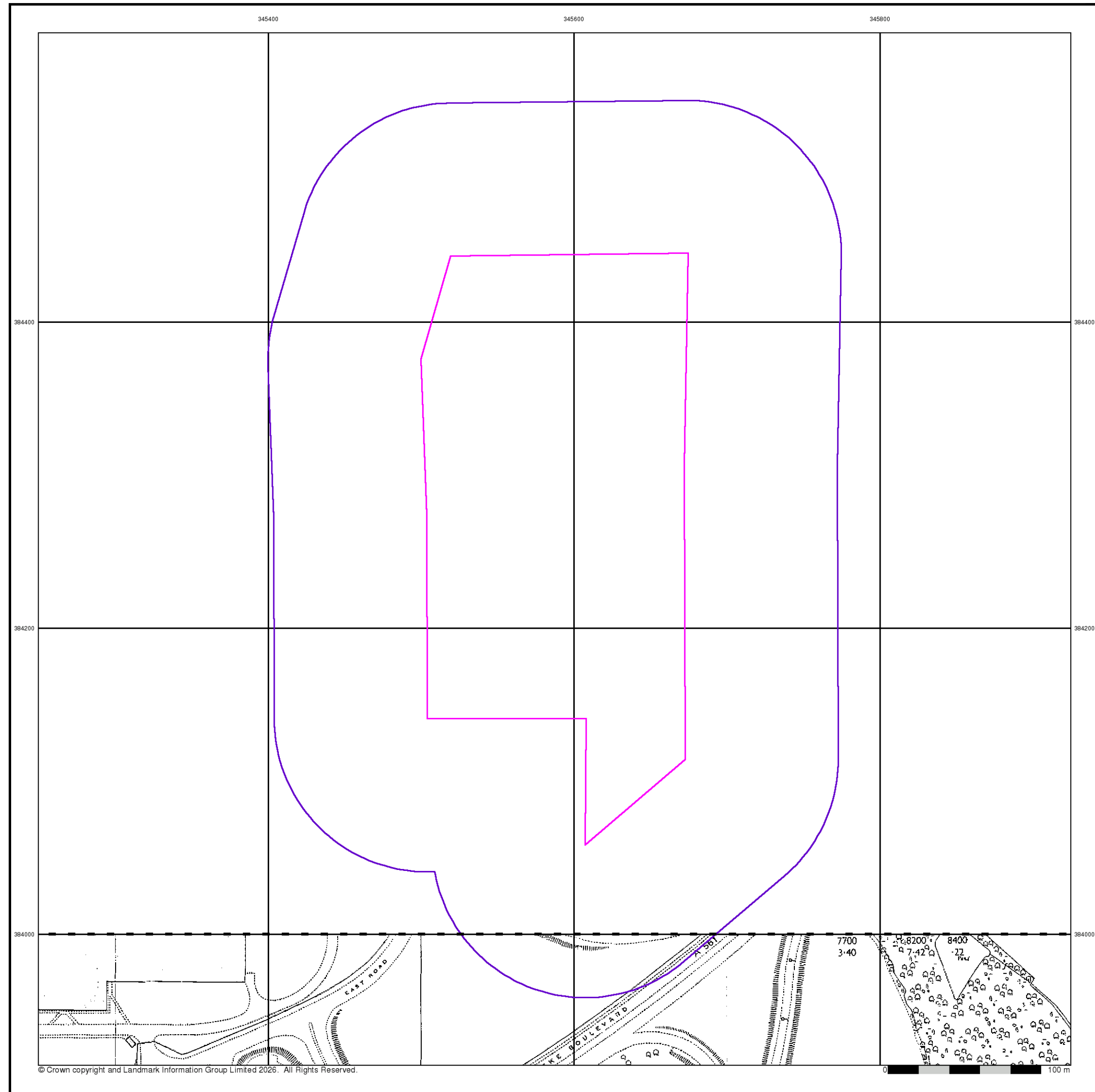
Slice: A

Site Area (Ha): 5.46

Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



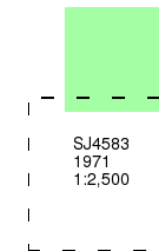
Additional SIMs

Published 1971

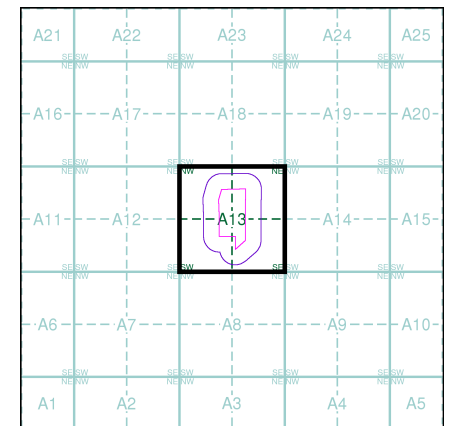
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13

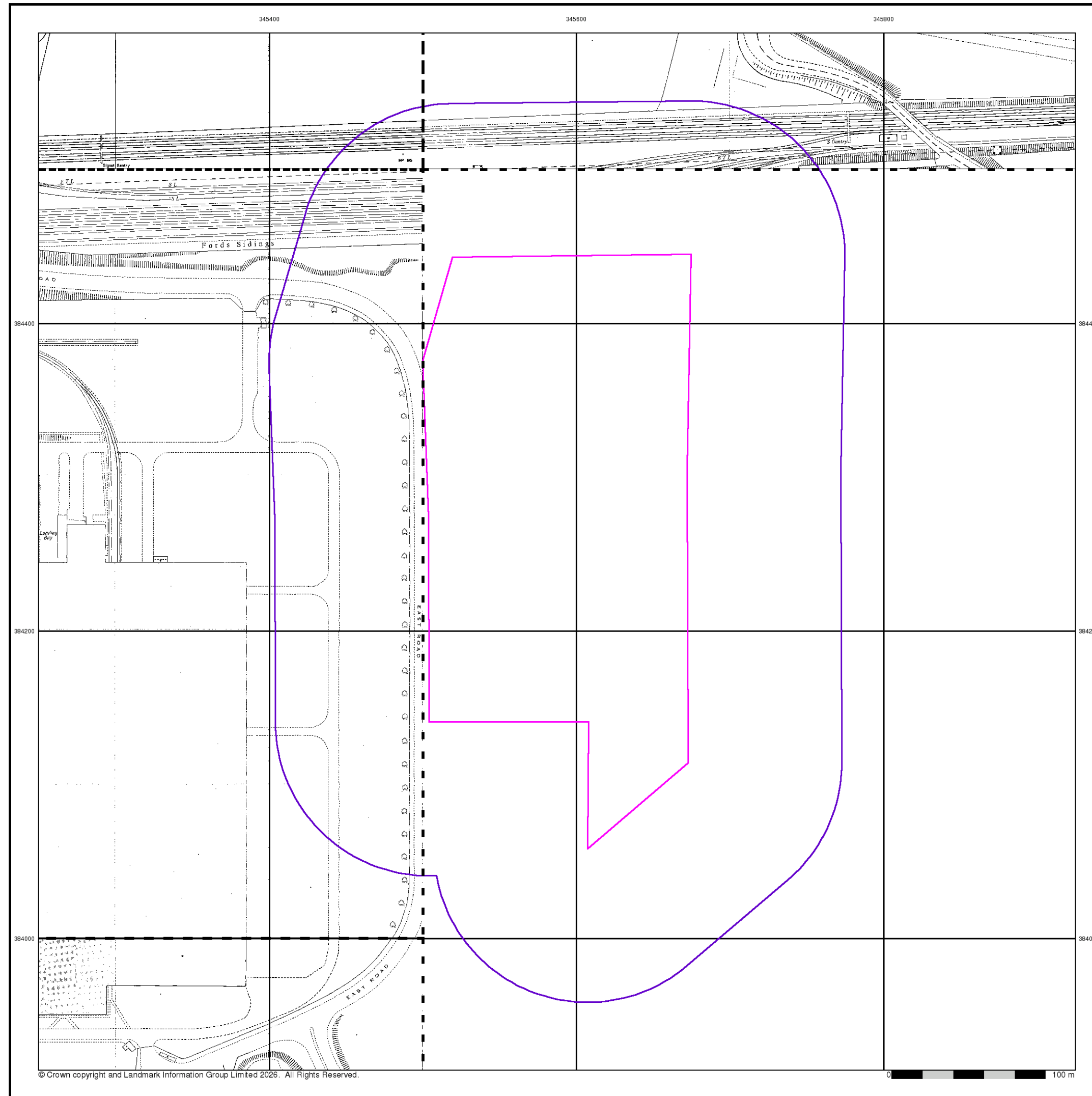


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

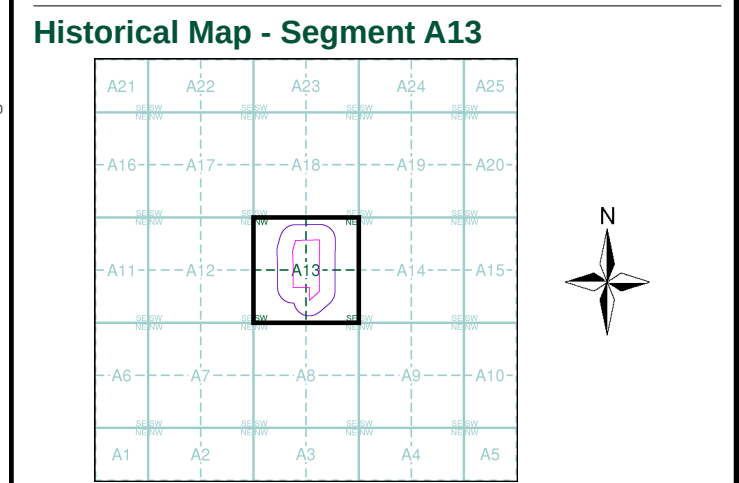
Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



Additional SIMs
Published 1984 - 1991
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

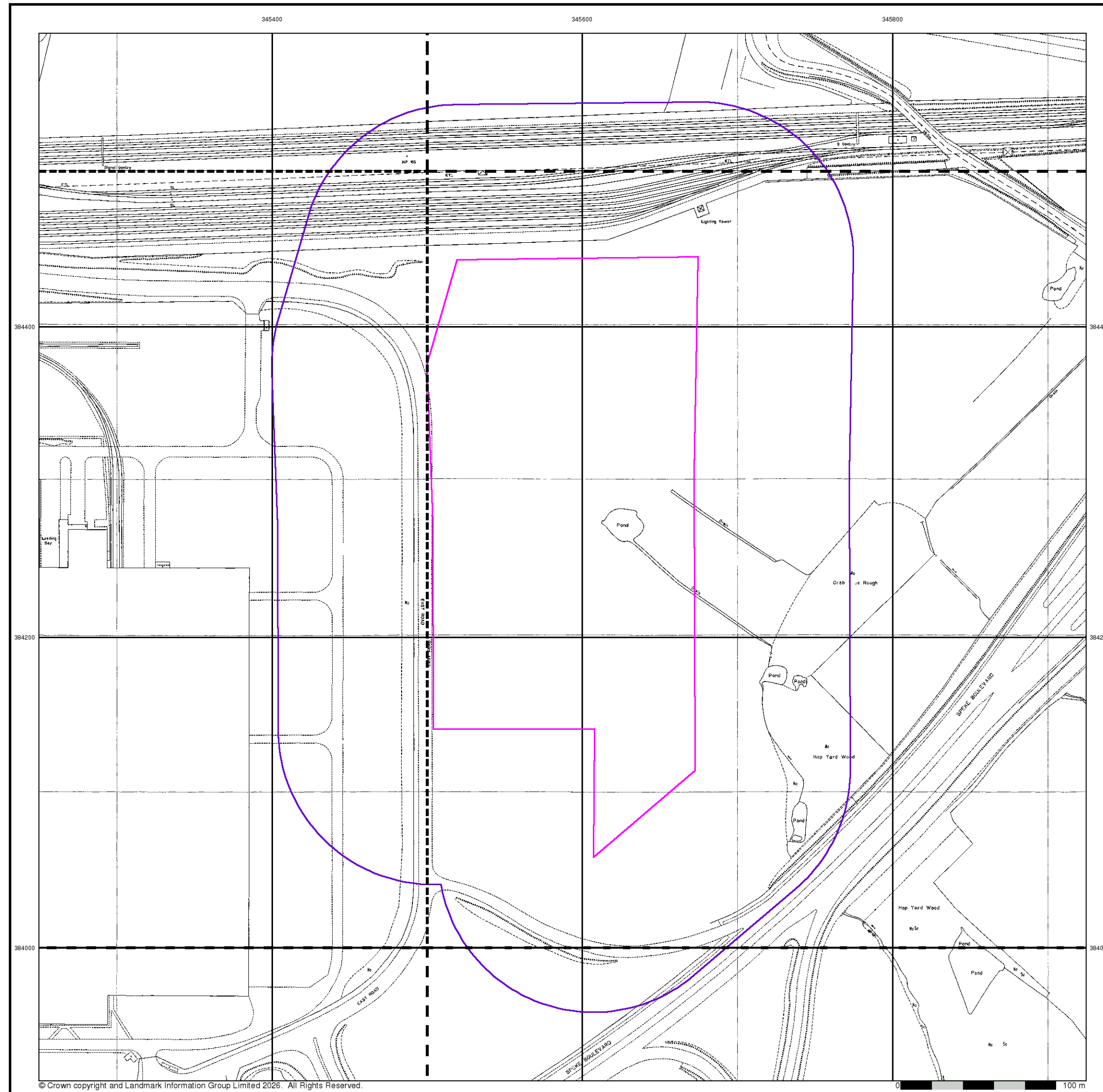
Map Name(s) and Date(s)	
BJ4584NW	1991
BJ4584NE	1984
BJ4584SW	1985
BJ4583NW	1985



Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details
Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



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Large-Scale National Grid Data

Published 1993

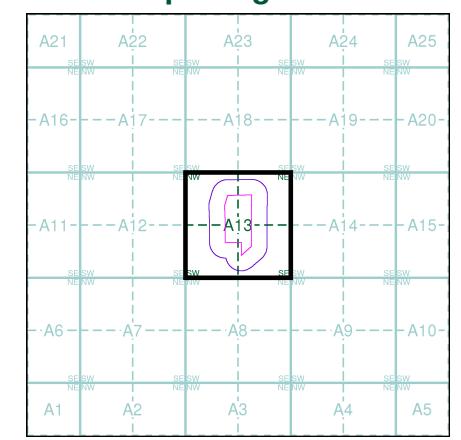
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

BJ4584NW	BJ4584NE
1993	1993
1:1,250	1:1,250
BJ4584SW	BJ4584SE
1993	1993
1:1,250	1:1,250
BJ4583NW	BJ4583NE
1993	1993
1:1,250	1:1,250

Historical Map - Segment A13

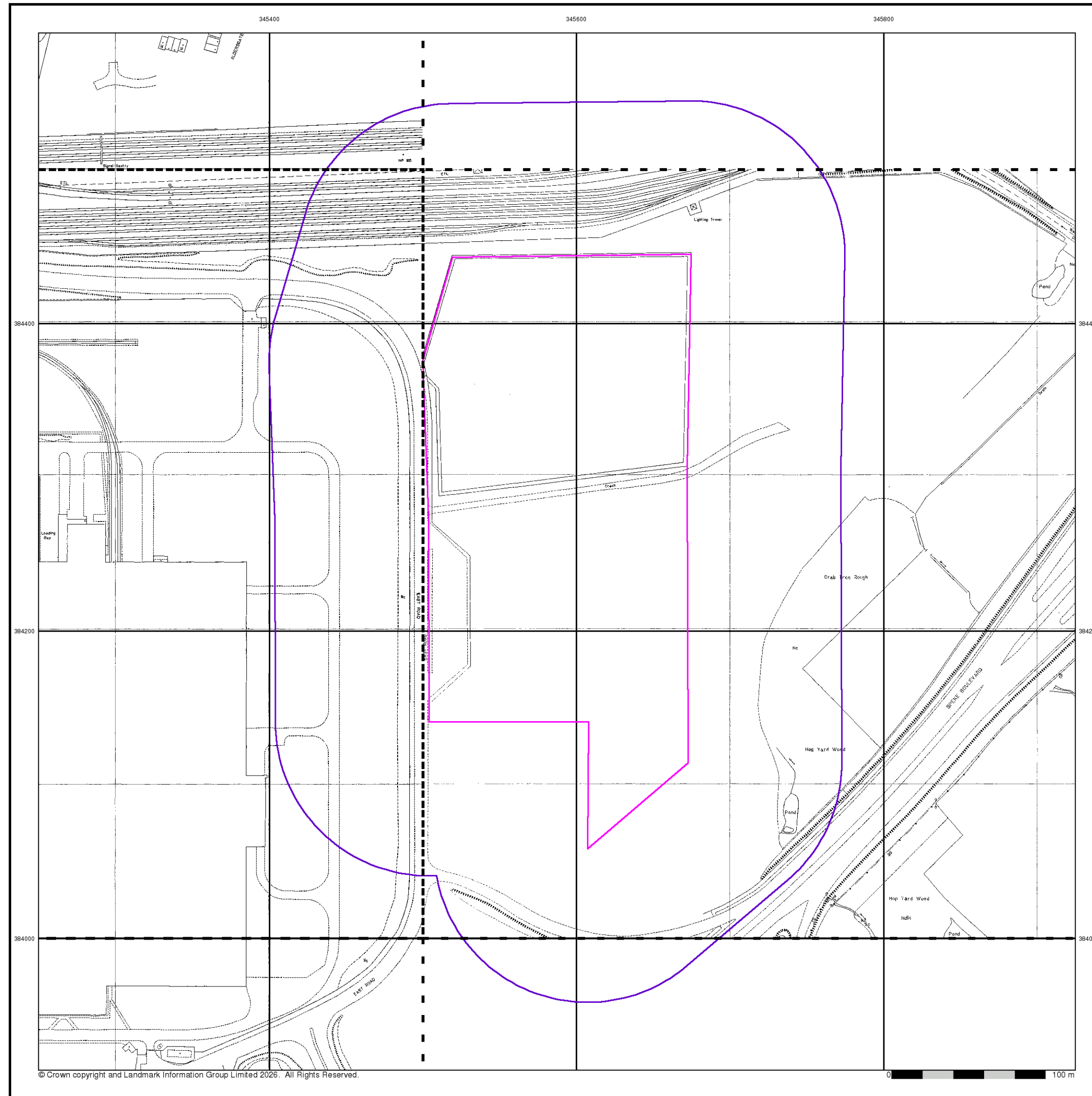


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 100

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



Large-Scale National Grid Data

Published 1994 - 1995

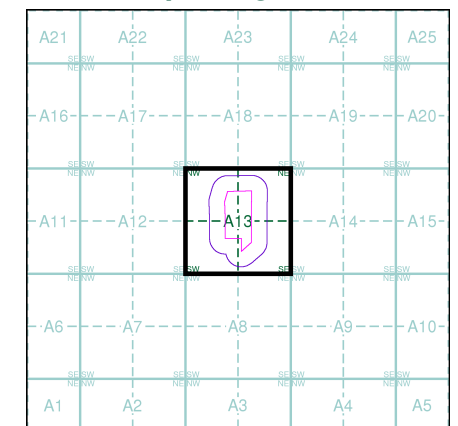
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

BJ4584NW	1995	1:1,250
BJ4584SW	1994	1:1,250
BJ4584SE	1994	1:1,250
BJ4583NW	1994	1:1,250

Historical Map - Segment A13

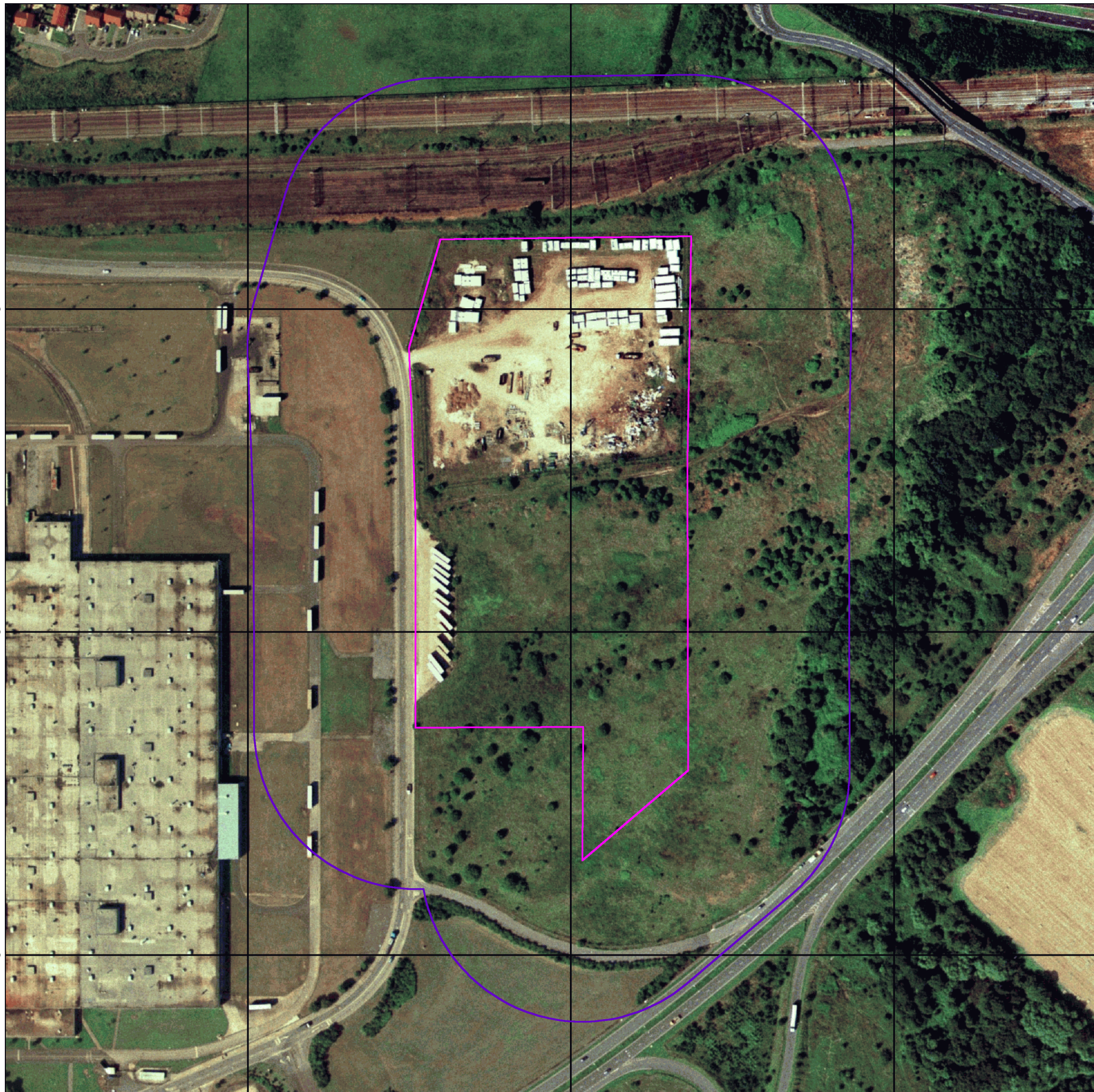


Order Details

Order Number:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
Search Buffer (m):	100

Site Details

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0 100 m

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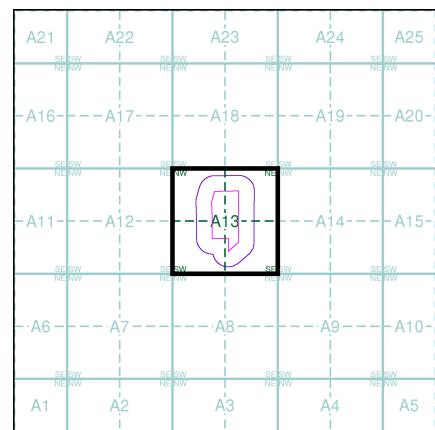
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Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
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Site Details

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		
	Bracken		Heath
	Rough Grassland		
	Marsh		Reeds
	Saltings		
	Building		Direction of Flow of Water
	Glasshouse		Shingle
	Sloping Masonry		Sand
	Pylon		Electricity Transmission Line
	Pole		
	Cutting		Embankment
	Standard Gauge Multiple Track		
	Standard Gauge Single Track		
	Siding, Tramway or Mineral Line		
	Narrow Gauge		
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency		
	Civil Parish		
	Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

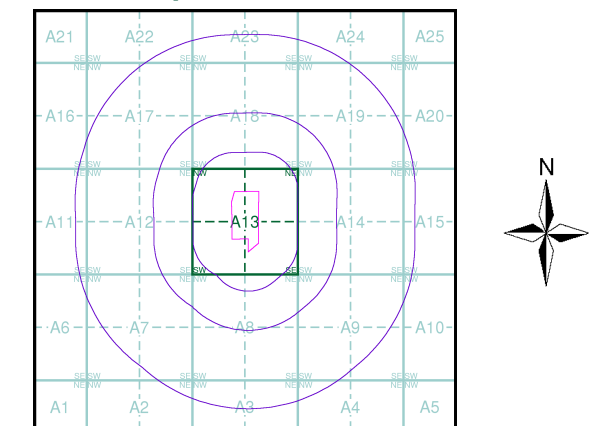
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1849	3
Cheshire	1:10,560	1881 - 1882	4
Lancashire And Furness	1:10,560	1894	5
Lancashire And Furness	1:10,560	1896	6
Cheshire	1:10,560	1899	7
Lancashire And Furness	1:10,560	1908	8
Cheshire	1:10,560	1911 - 1912	9
Cheshire	1:10,560	1911	10
Lancashire And Furness	1:10,560	1928	11
Lancashire And Furness	1:10,560	1928	12
Cheshire	1:10,560	1938	13
Lancashire And Furness	1:10,560	1938	14
Lancashire And Furness	1:10,560	1938	15
Ordnance Survey Plan	1:10,000	1949 - 1956	16
Ordnance Survey Plan	1:10,000	1967 - 1968	17
Ordnance Survey Plan	1:10,000	1970 - 1977	18
Liverpool	1:10,000	1974	19
Ordnance Survey Plan	1:10,000	1981 - 1984	20
St Helens	1:10,000	1984	21
Ordnance Survey Plan	1:10,000	1990 - 1992	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2025	25

Historical Map - Slice A



Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ

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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Fireproof Building Prominent Fireproof Building

Non-fireproof Building Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale Hydroelectric Power Station

Radio Station, drawn to scale Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry Open-pit Salt Mine

Pit Oil Deposit or Well Oil Seepage

Tailings Pile Fuel Storage Tanks Natural Gas Tank

Bench Mark Drill Hole Burial Mound Triangulation Point on Burial Mound

Single-track Railroad Small Bridge Double-track Railroad and Station Building

Coniferous Forest Deciduous Forest Mixed Forest

Lawns Citrus Orchard Wet Ground Scattered Vegetation

243.8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0.2 Velocity of the current, width of river bed, depth of river

180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A) З з (Z) П п (P) Ч ч (CH)

Б б (B) И и (I) Р р (R) Ш ш (SH)

В в (V) Й й (Y) С с (S) Щ щ (SHCH)

Г г (G) К к (K) Т т (T) Ъ ъ (-)

Д д (D) Л л (L) У у (U) Ы ы (Y)

Е е (E) М м (M) Ф ф (F) Ь ь (')

Ё ё (YO) Н н (N) Х х (KH) Э э (E)

Ж ж (ZH) О о (O) Ц ц (TS) Ю ю (YU or IU)

Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Partly Demolished Buildings Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building Prominent Industrial Building

Individual Dwelling, Fireproof Ruins of an Individual Dwelling

Factory or Mill Chimney Factory or Mill with Chimney Factory or Mill without Chimney Mine or Open Pit Mine

Operating Shaft or Mine Non-Operating Shaft or Mine Salt Mine Tailings Pile

Pit Stone Quarry Gas Pump or Service Station Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick Small Hydroelectric Power Station Power Station Transformer Station

Cemetery Burial Mound (height in metres) Triangulation Point on Burial Mound Triangulation Point

Bench Mark Bench Mark (monumented) Telegraph Office Telephone Station

Radio Station Radio Tower Airfield or Seaplane Base Landing Strip

Telegraph/Telephone Lines Main Highway Highway under Construction Improved Dirt Road (former truck road)

Double-track Railroad with First Class Station Dismantled Railroad Railroad Under Construction

Shore Embankment River or Ditch with Embankment Direction and velocity of current Water Gauge

Well Water Reservoir or Rain Water Pit Spring Isobath with value

Heavy (Index) Contour Line Contour Line and Value Half Contour Line Spot Elevation Value

Coniferous Deciduous Mixed Scrub

Key to Numbers on Mapping

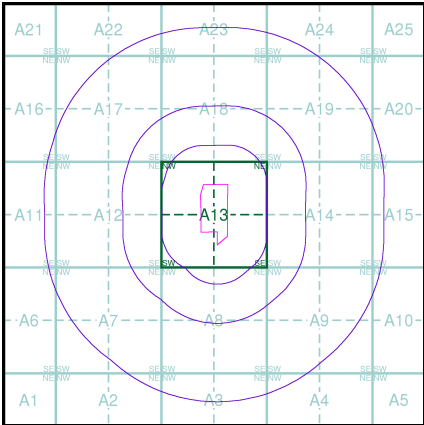
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1849	3
Cheshire	1:10,560	1881 - 1882	4
Lancashire And Furness	1:10,560	1894	5
Lancashire And Furness	1:10,560	1896	6
Cheshire	1:10,560	1899	7
Lancashire And Furness	1:10,560	1908	8
Cheshire	1:10,560	1911 - 1912	9
Cheshire	1:10,560	1911	10
Lancashire And Furness	1:10,560	1928	11
Lancashire And Furness	1:10,560	1928	12
Cheshire	1:10,560	1938	13
Lancashire And Furness	1:10,560	1938	14
Lancashire And Furness	1:10,560	1938	15
Ordnance Survey Plan	1:10,000	1949 - 1956	16
Ordnance Survey Plan	1:10,000	1967 - 1968	17
Ordnance Survey Plan	1:10,000	1970 - 1977	18
Liverpool	1:10,000	1974	19
Ordnance Survey Plan	1:10,000	1981 - 1984	20
St Helens	1:10,000	1984	21
Ordnance Survey Plan	1:10,000	1990 - 1992	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2025	25

Russian Map - Slice A



Order Details

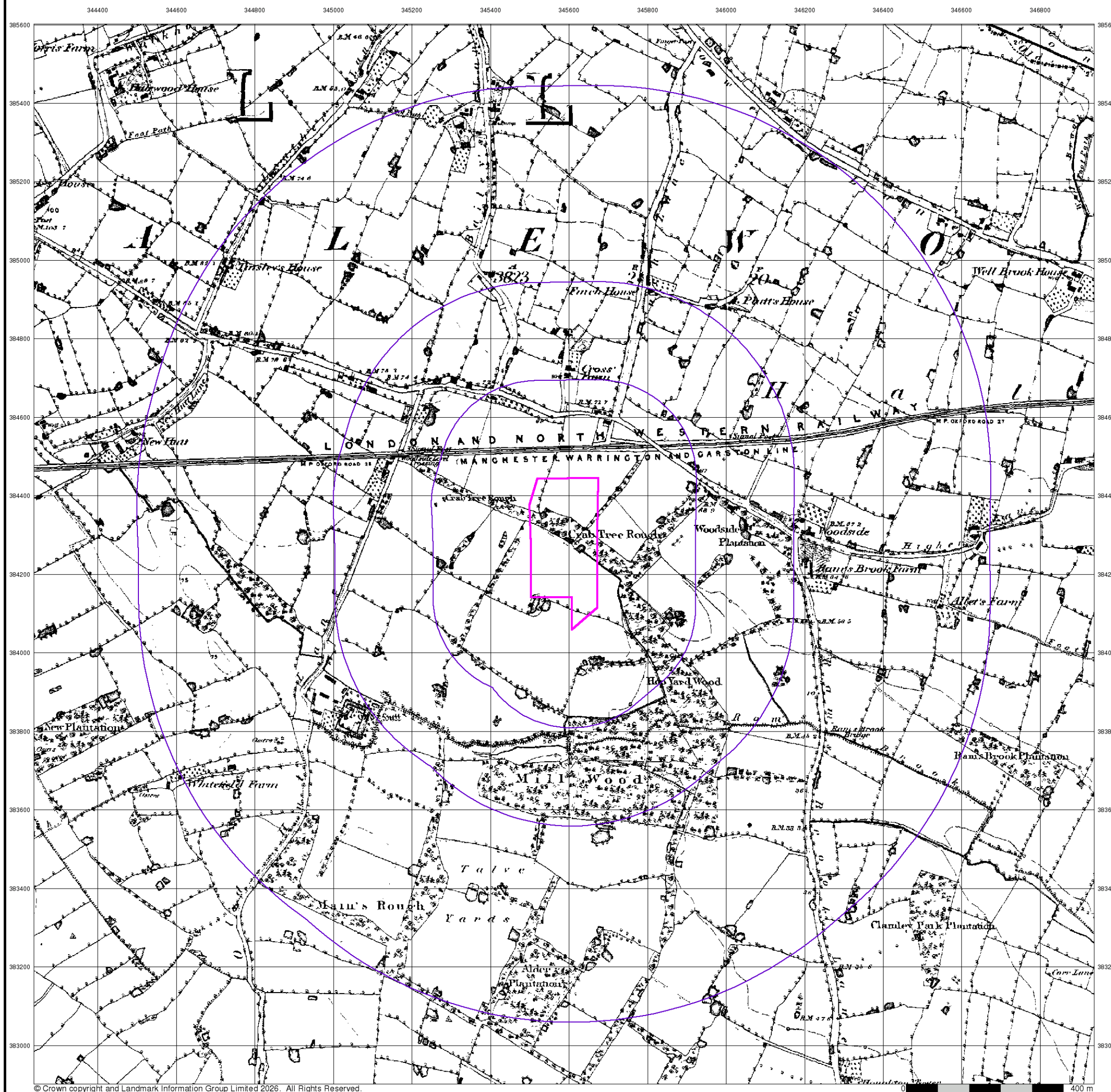
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Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

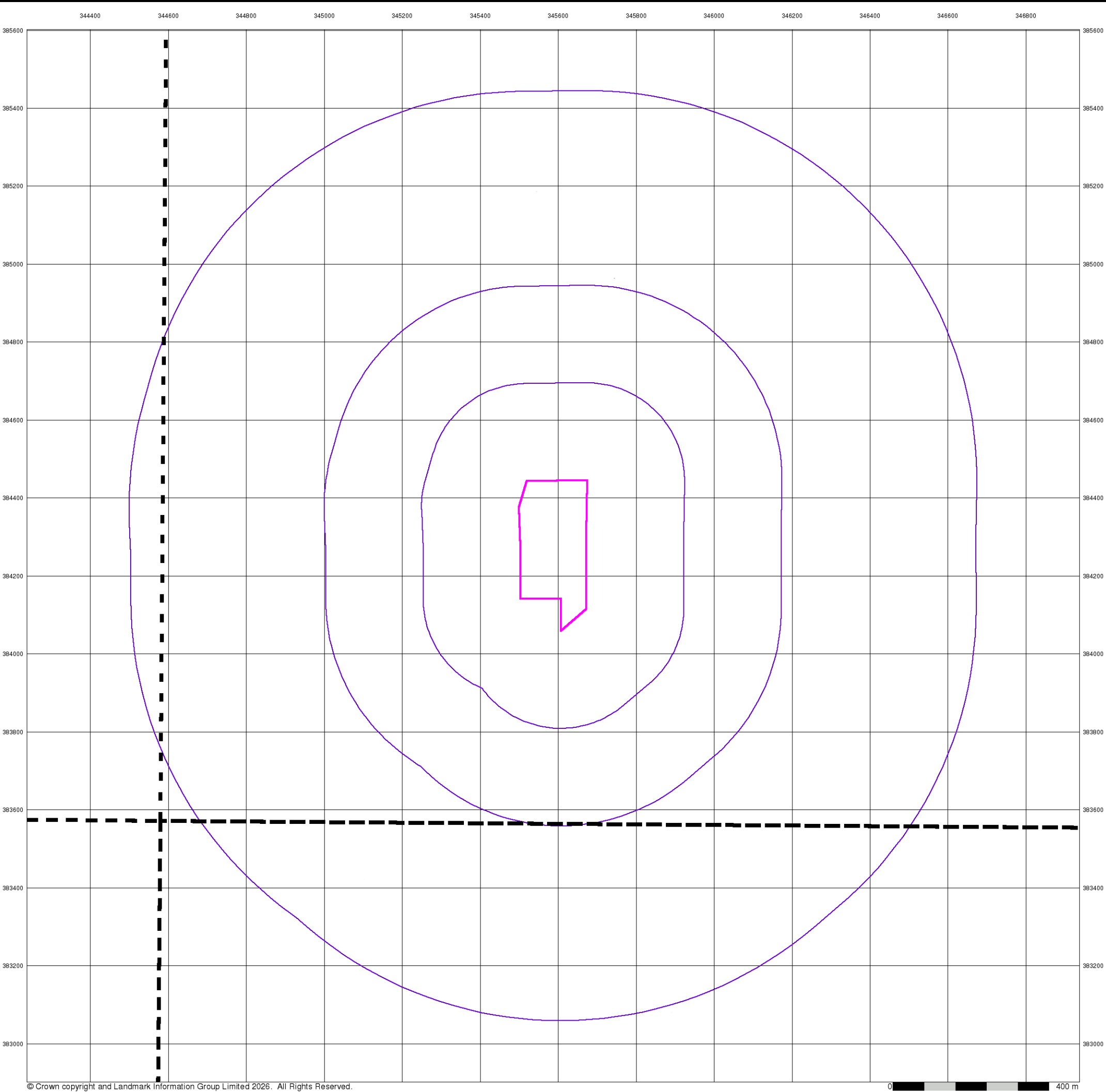
Site Details

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Cheshire

Published 1881 - 1882

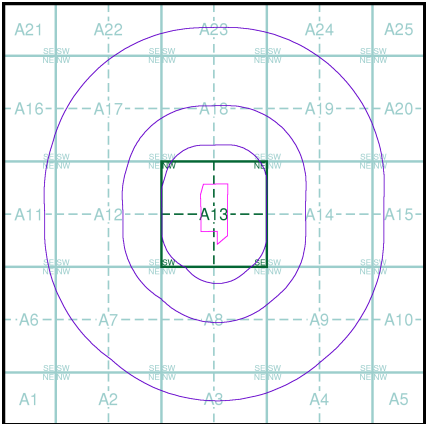
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01400 1881 1:10,560	01500 1881 1:10,560
02300 1881 1:10,560	02400 1882 1:10,560

Historical Map - Slice A

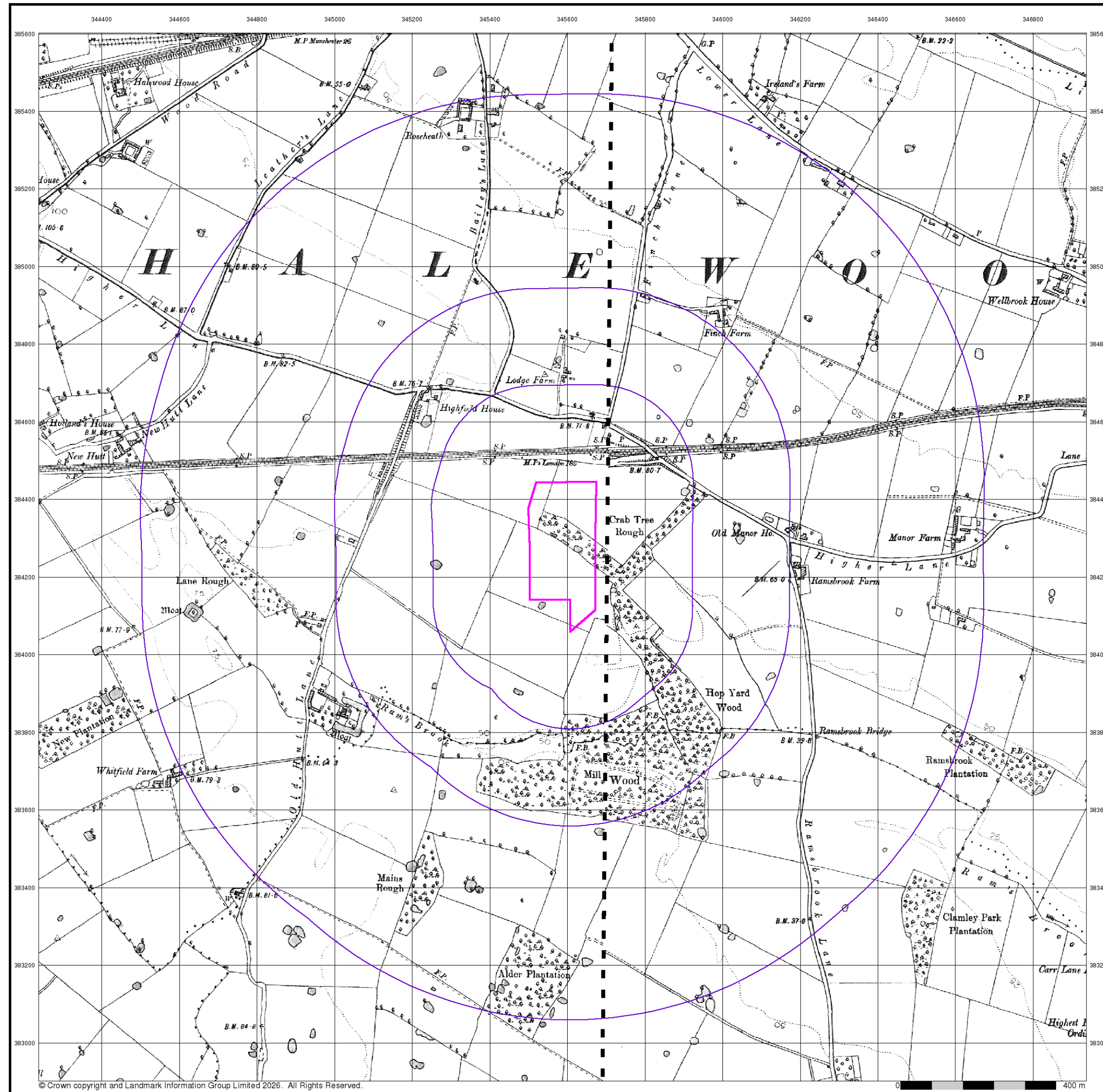


Order Details

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Customer Ref: LW25-136
National Grid Reference: 345590, 384270
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Site Area (Ha): 5.46
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Site Details

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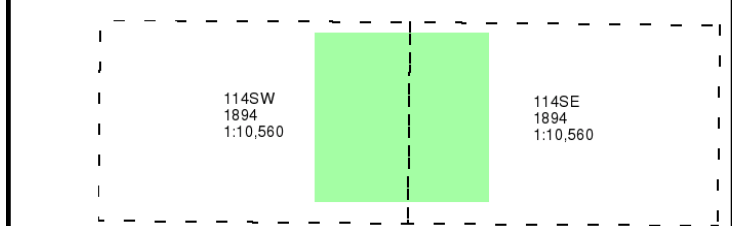
Lancashire And Furness

Published 1894

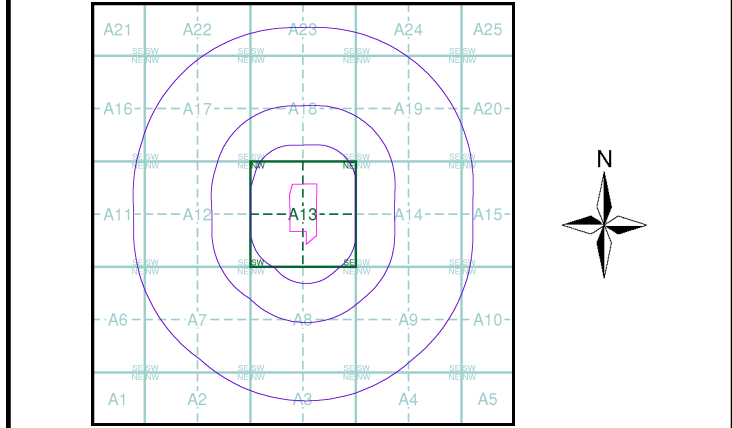
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



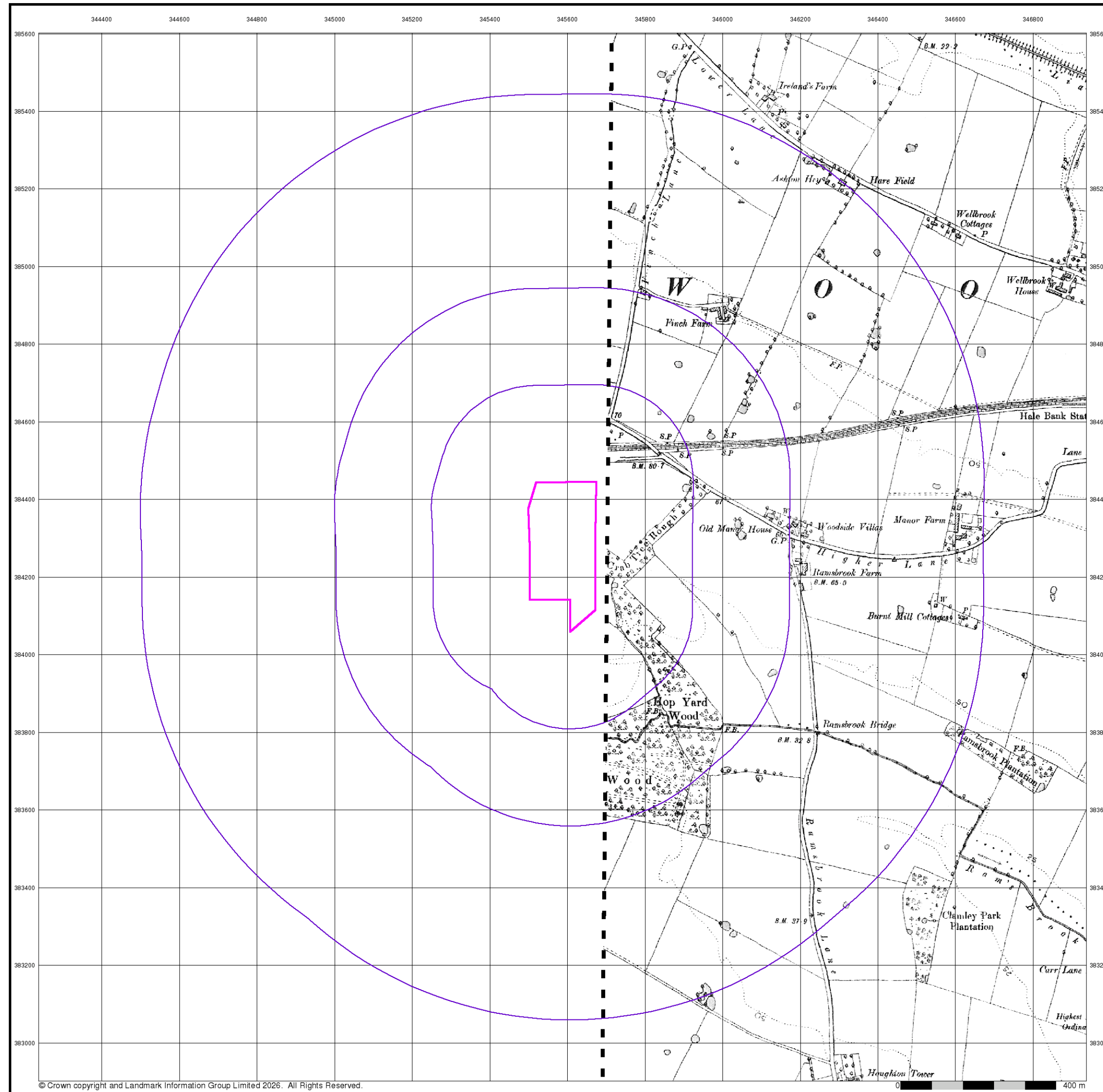
Order Details

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National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
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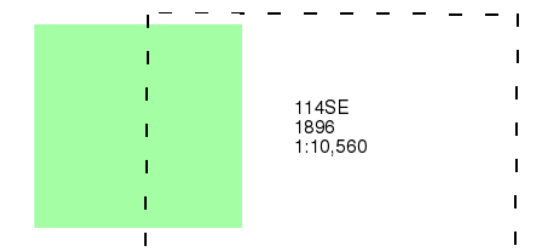
Lancashire And Furness

Published 1896

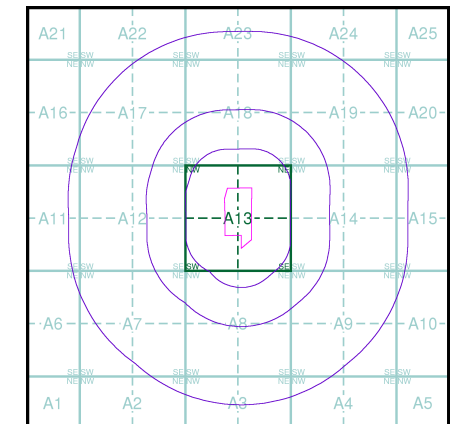
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

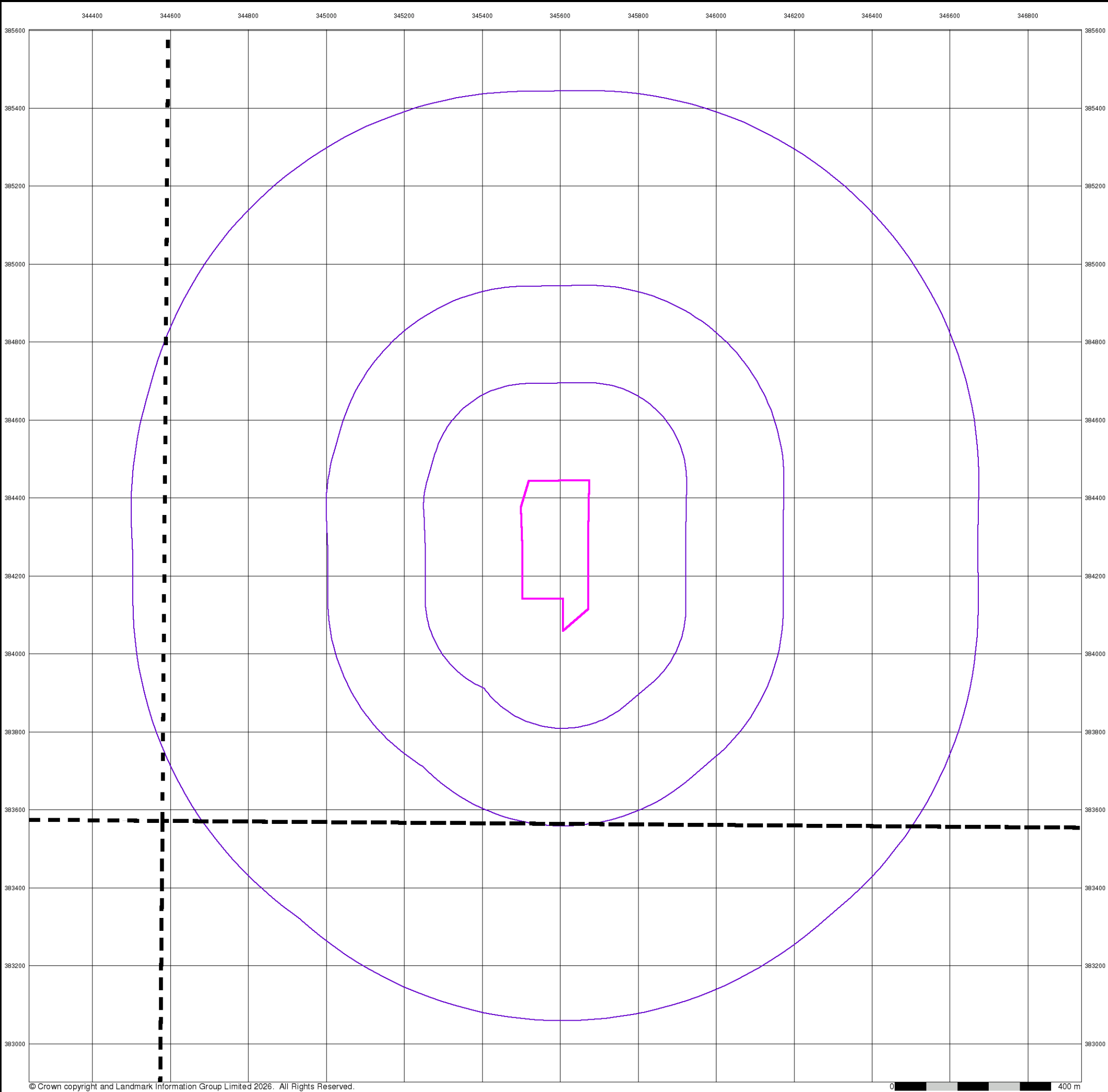


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

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Cheshire

Published 1899

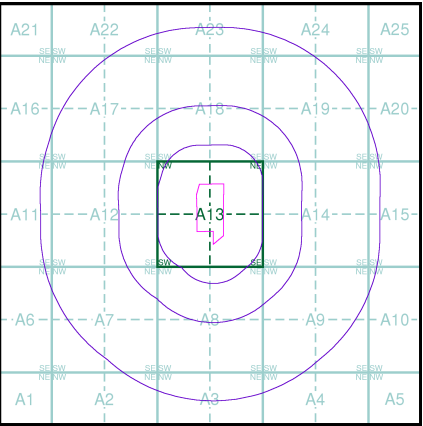
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

014SE 1899 1:10,560	015SW 1899 1:10,560
023NE 1899 1:10,560	024NW 1899 1:10,560

Historical Map - Slice A

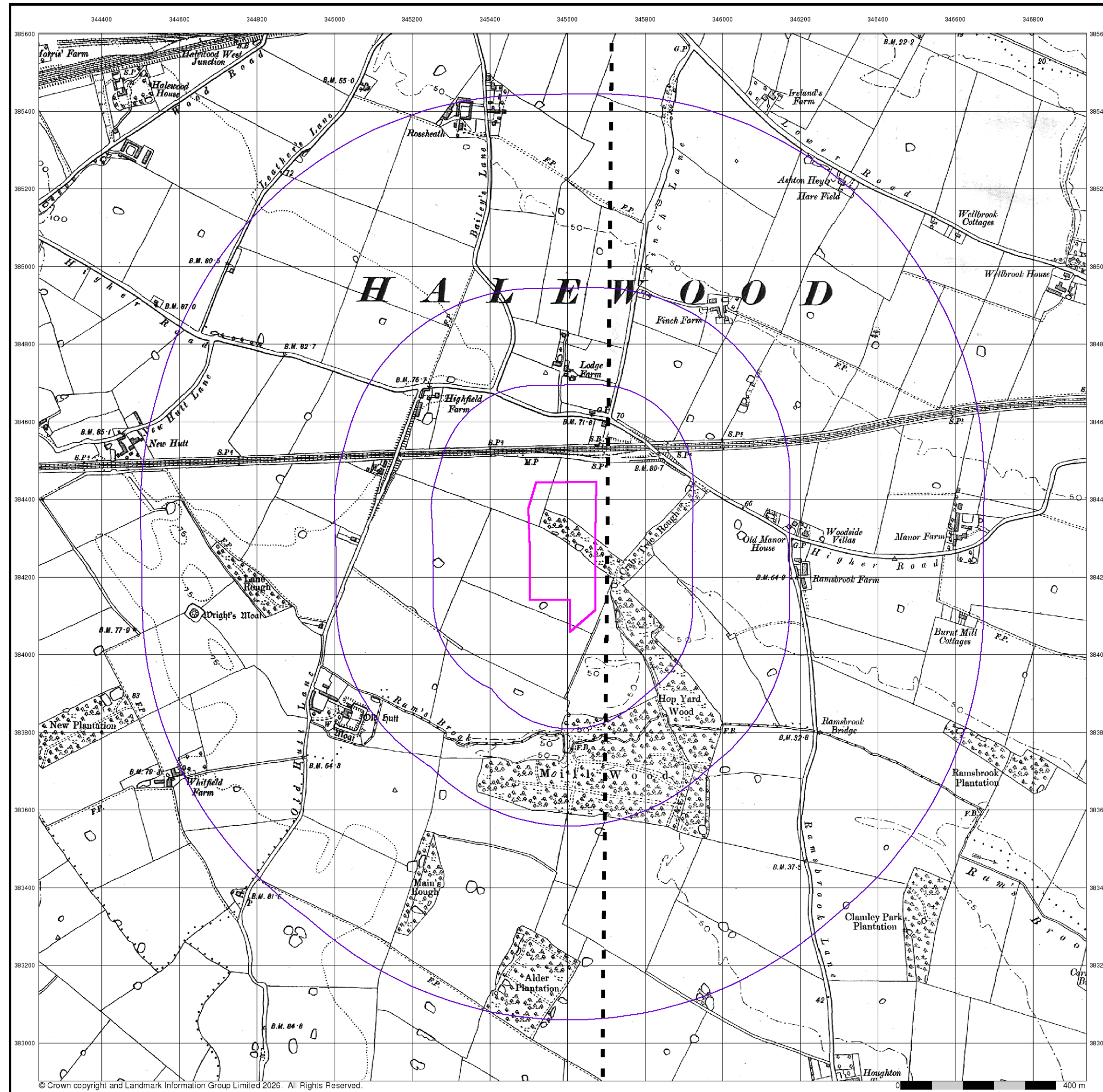


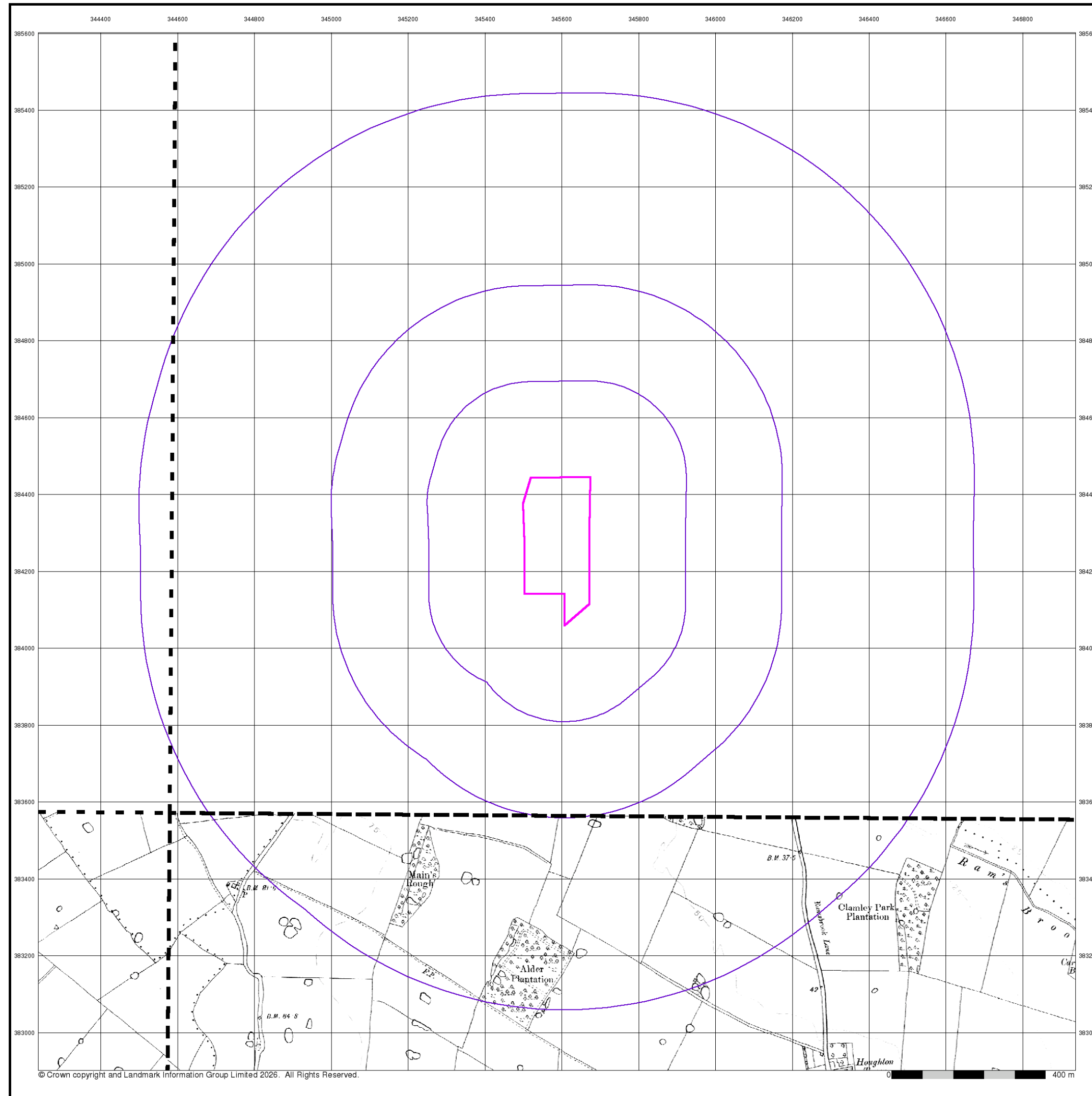
Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
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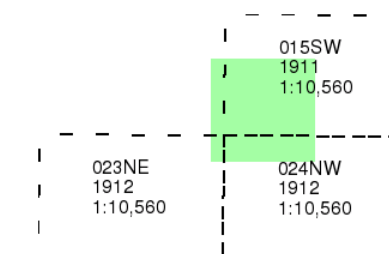
Cheshire

Published 1911 - 1912

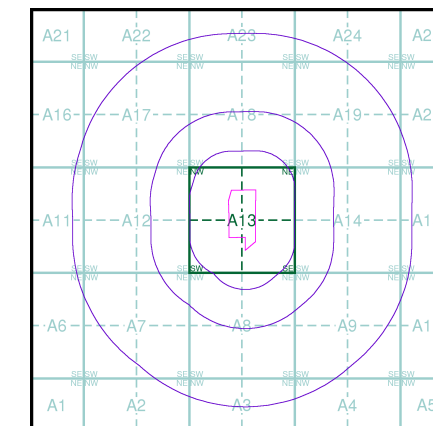
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

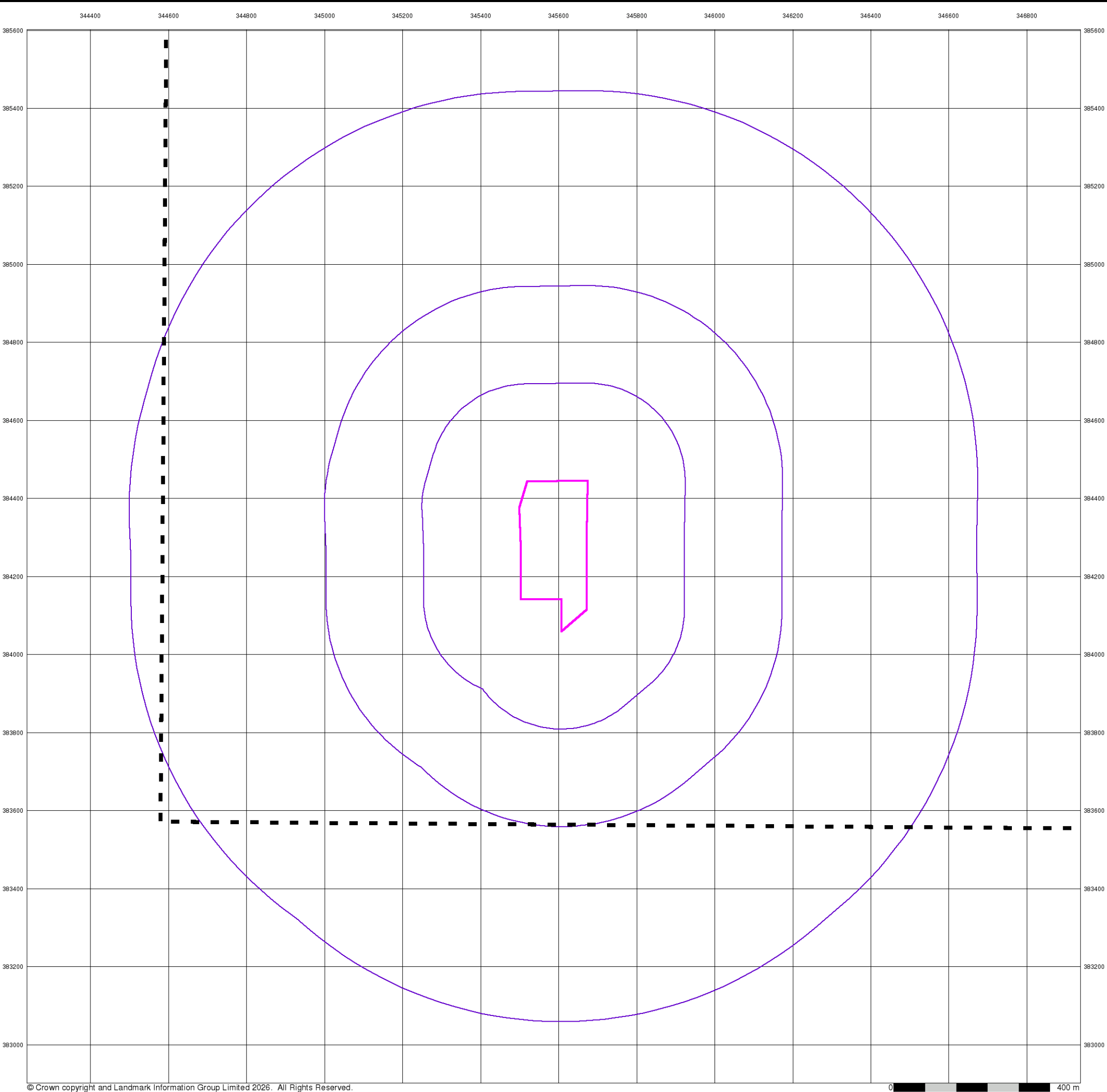
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Customer Ref: LW25-136
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Slice: A
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Search Buffer (m): 1000

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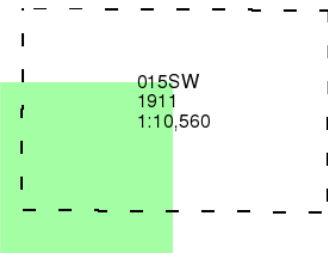
Cheshire

Published 1911

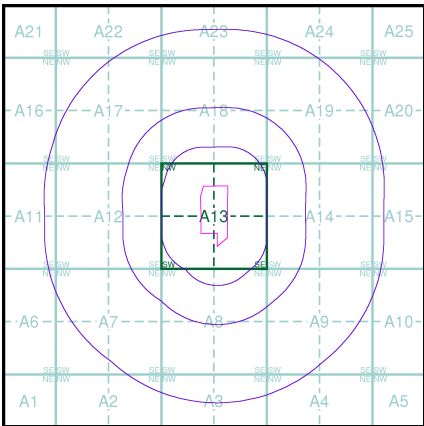
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:

393191569_1_1

Customer Ref:

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National Grid Reference:

345590, 384270

Slice:

A

Site Area (Ha):

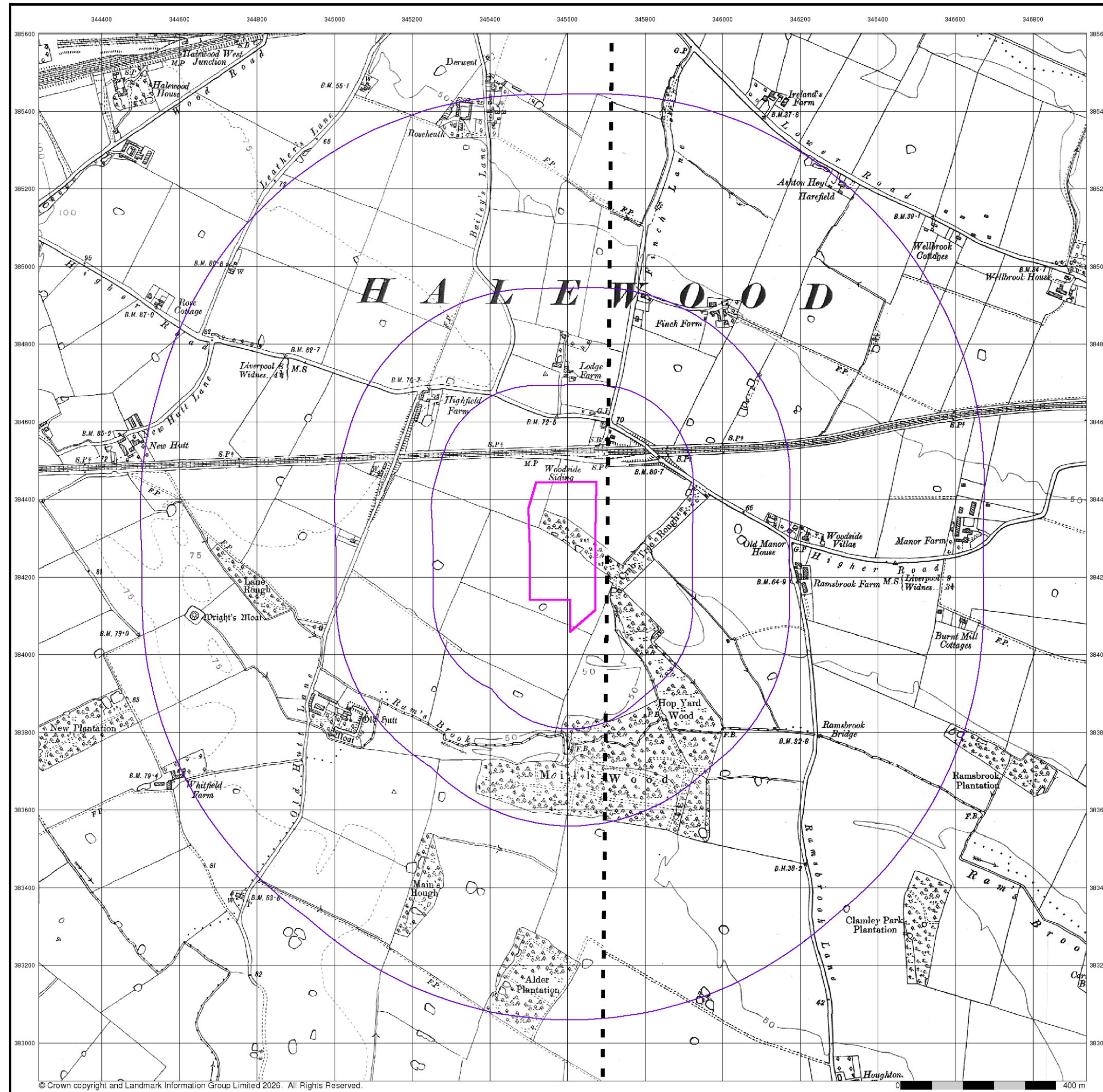
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Search Buffer (m):

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Site Details

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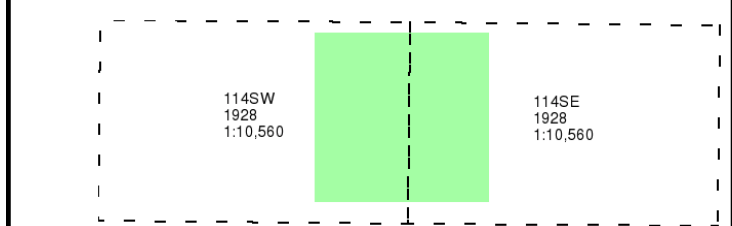
Lancashire And Furness

Published 1928

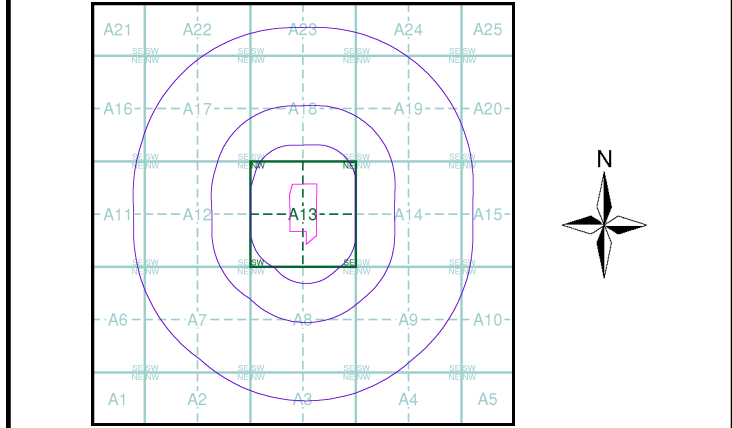
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Map Name(s) and Date(s)



Historical Map - Slice A



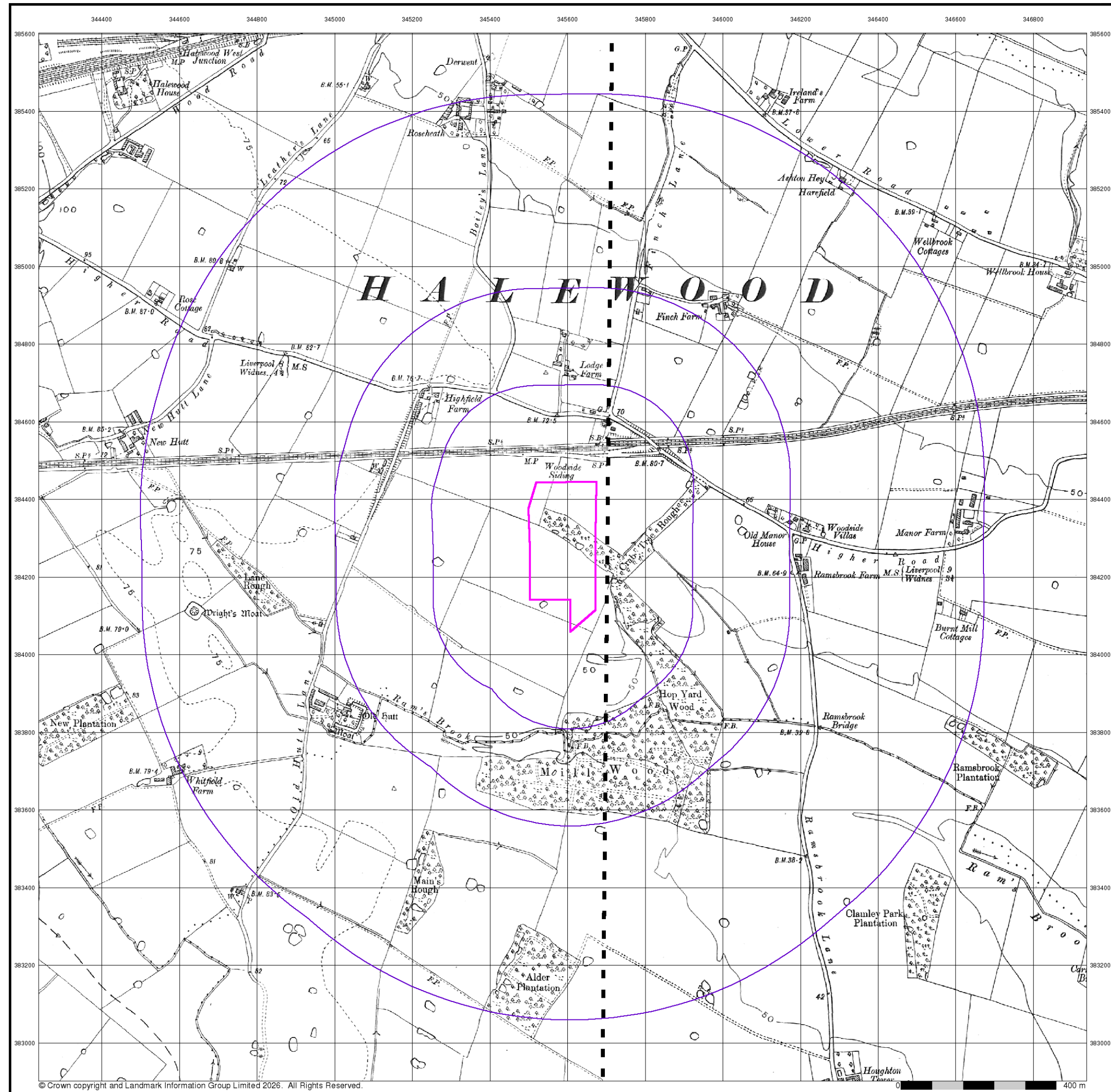
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National Grid Reference: 345590, 384270
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Site Area (Ha): 5.46
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Site Details

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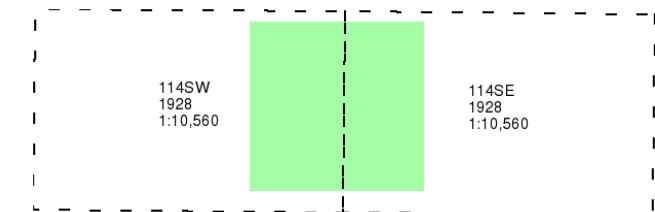
Lancashire And Furness

Published 1928

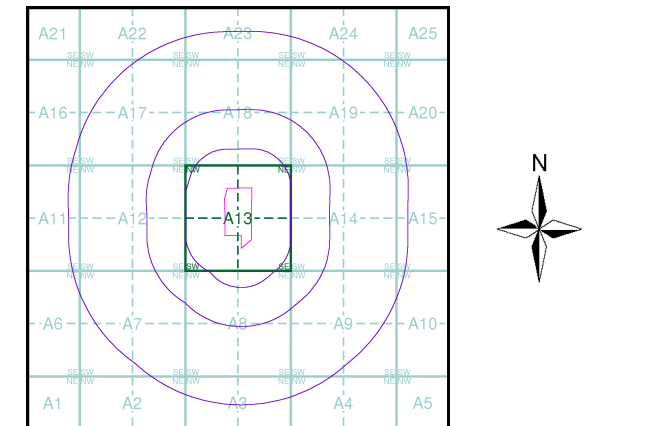
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

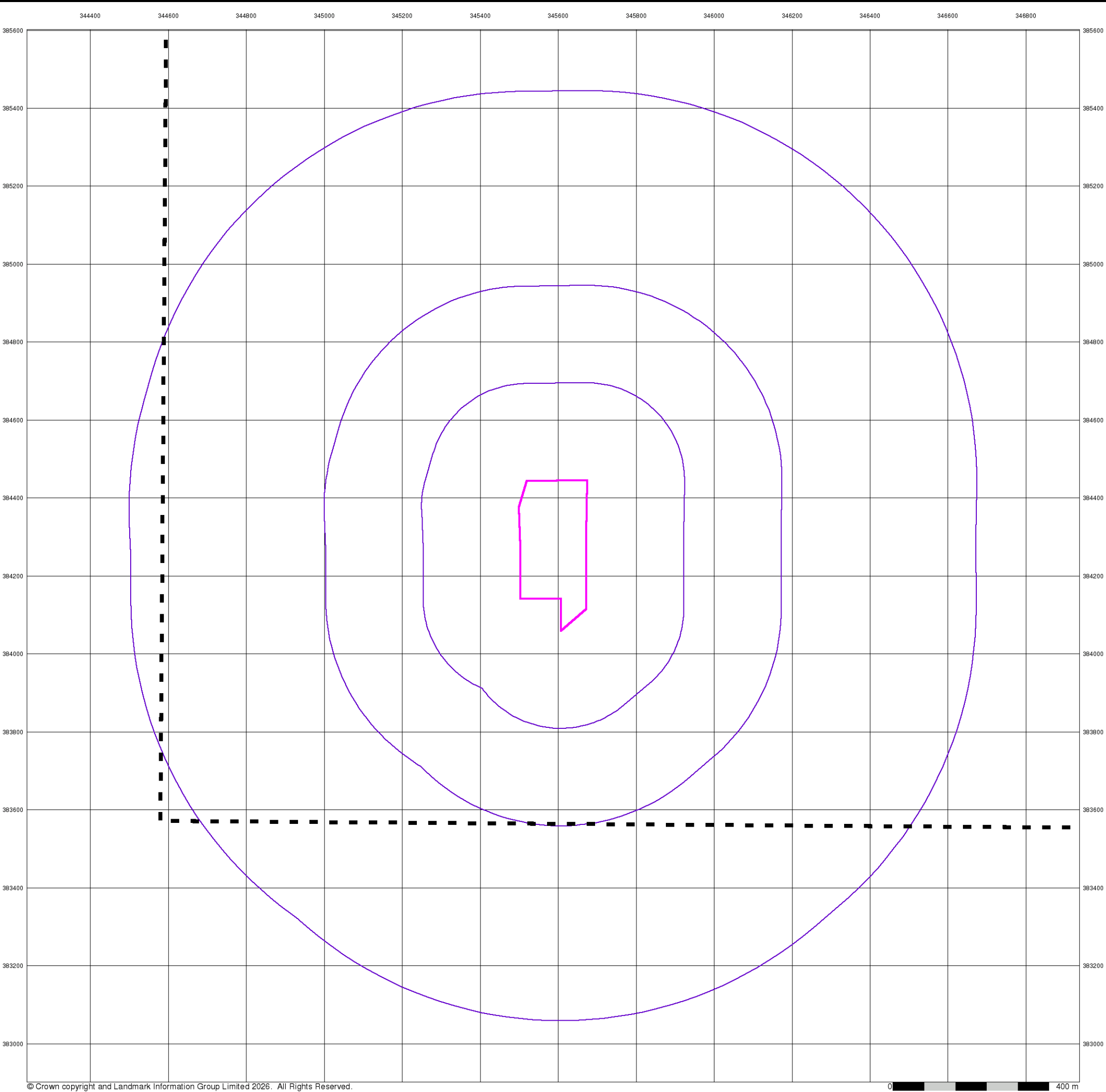
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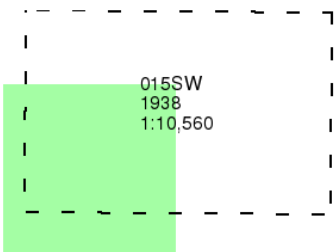
Cheshire

Published 1938

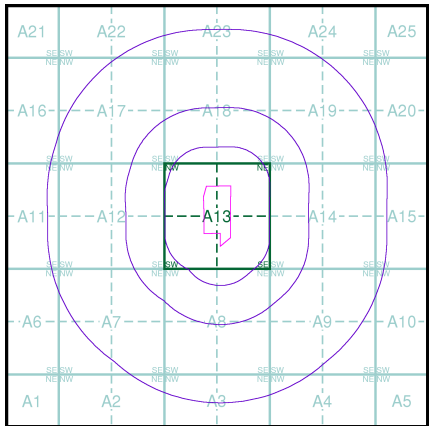
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Map Name(s) and Date(s)



Historical Map - Slice A

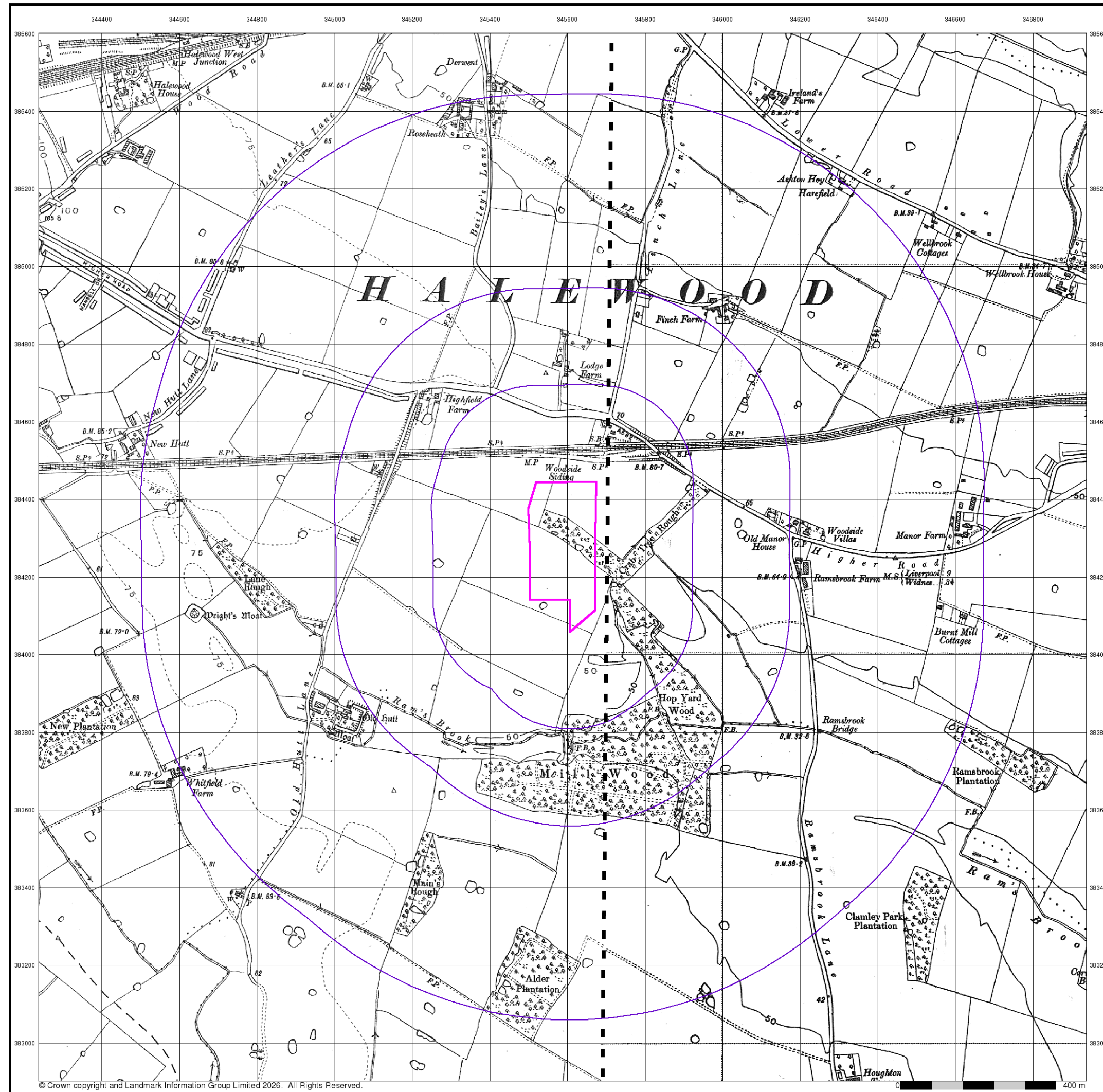


Order Details

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National Grid Reference: 345590, 384270
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Site Area (Ha): 5.46
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Site Details

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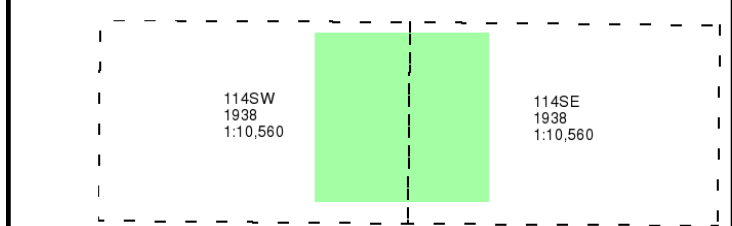
Lancashire And Furness

Published 1938

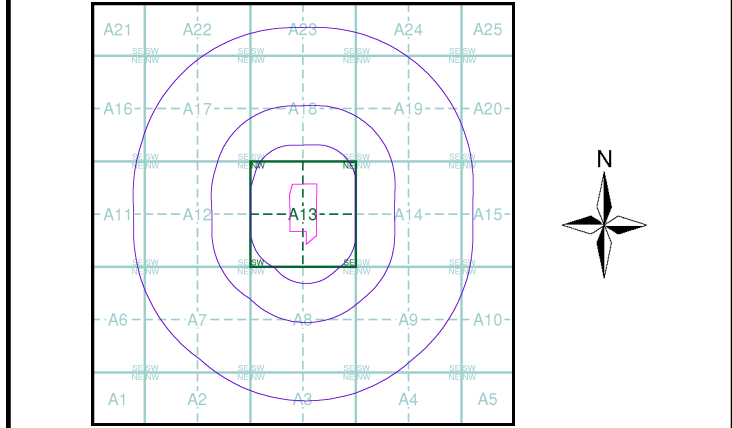
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



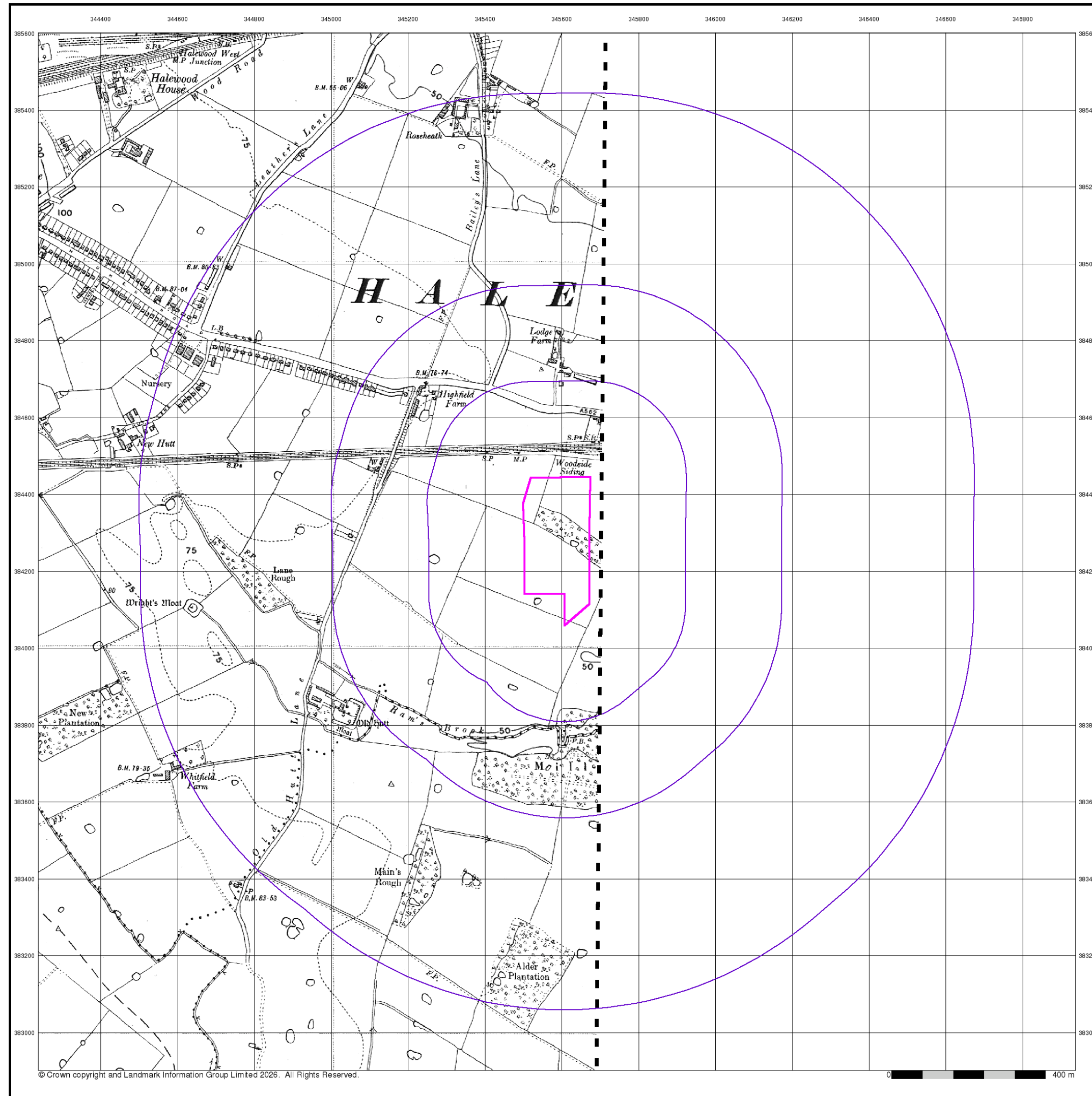
Order Details

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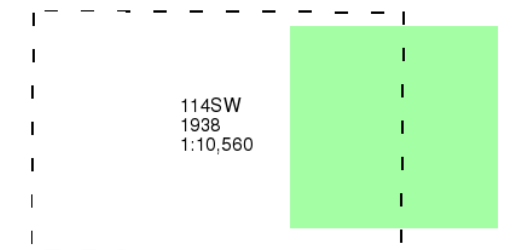
Lancashire And Furness

Published 1938

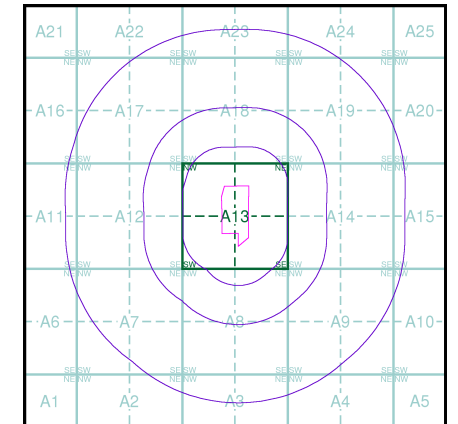
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

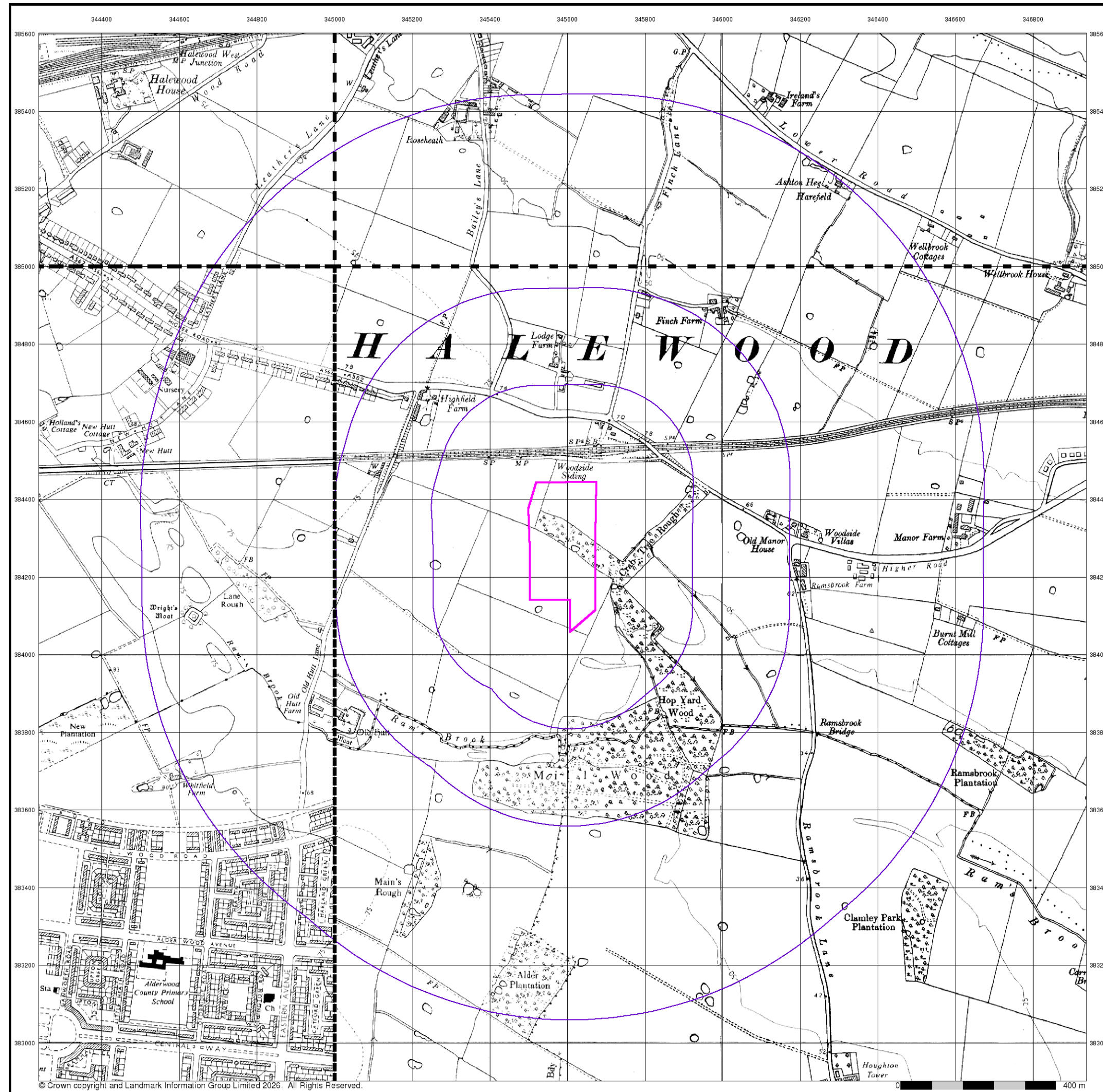
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National Grid Reference: 345590, 384270
Slice: A
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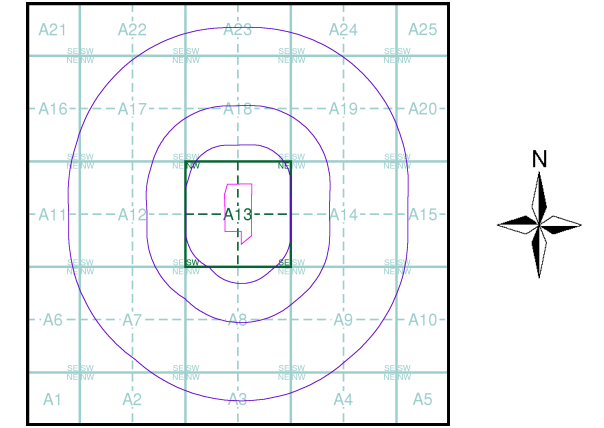
Ordnance Survey Plan
Published 1949 - 1956
Source map scale - 1:10,000

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Map Name(s) and Date(s)

SJ48NW	SJ48NE
1956	1955
1:10,560	1:10,560
SJ48SW	SJ48SE
1956	1949
1:10,560	1:10,560

Historical Map - Slice A



Order Details
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Ordnance Survey Plan

Published 1967 - 1968

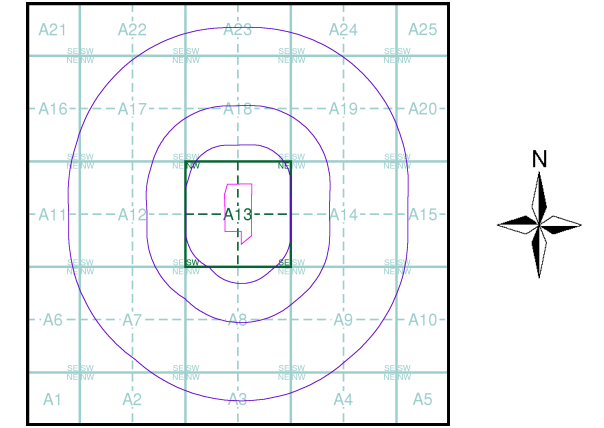
Source map scale - 1:10,000

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Map Name(s) and Date(s)

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SJ48SW	
1968	
1:10,560	

Historical Map - Slice A

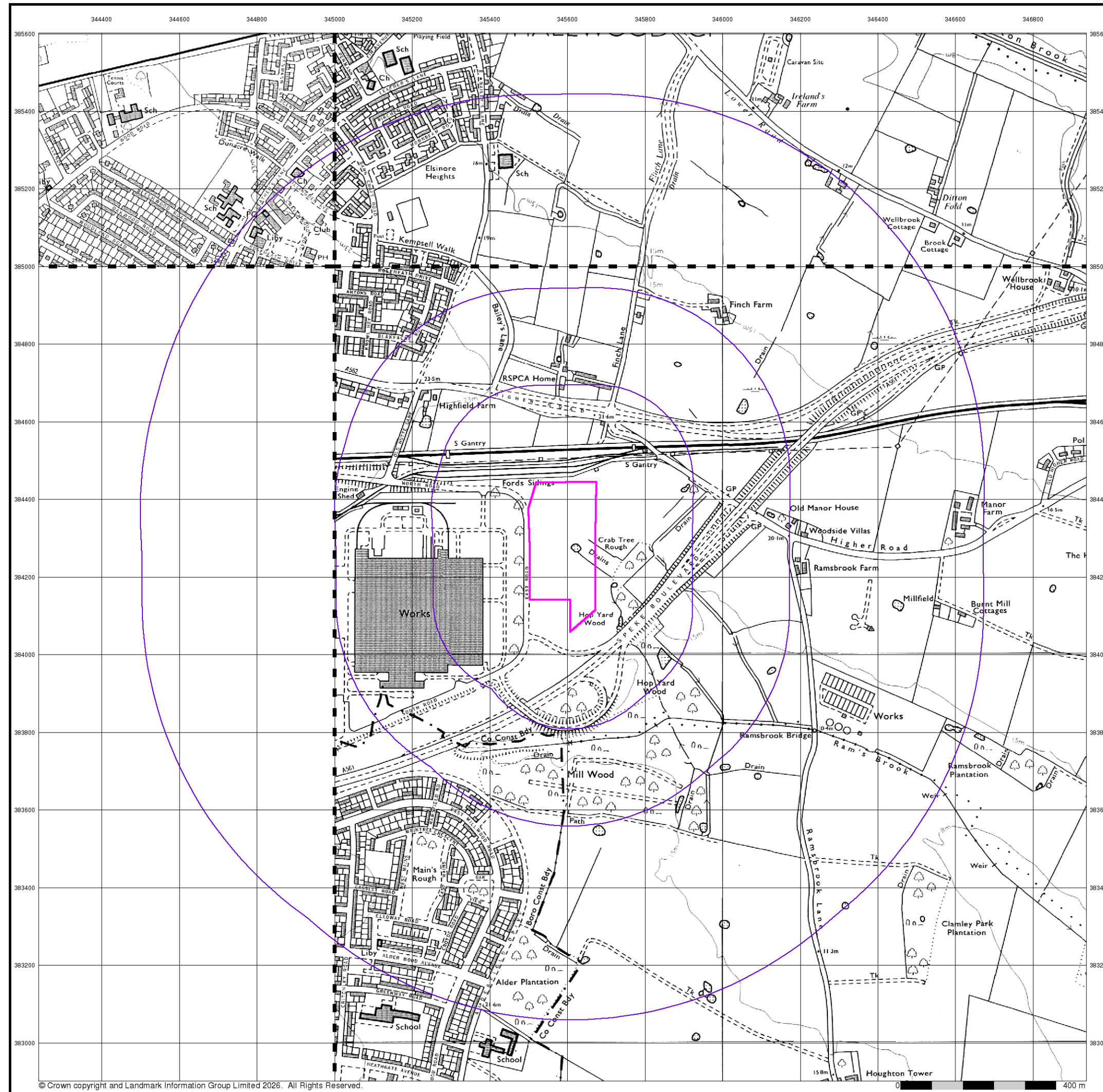


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
Search Buffer (m): 1000

Site Details

Jaguar Land Rover, Halewood, Liverpool, L24 9BJ



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Ordnance Survey Plan

Published 1970 - 1977

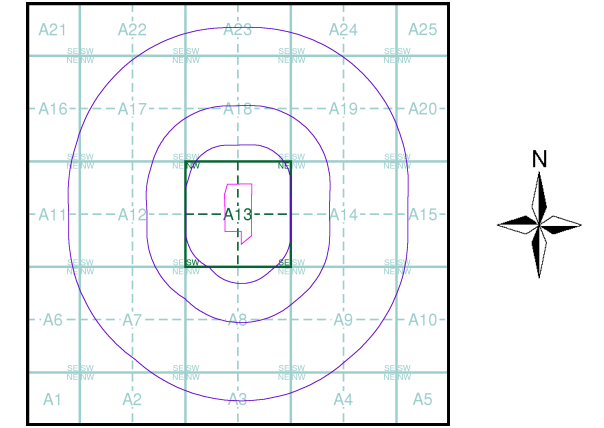
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

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	SJ48SE
	1970
	1:10,000

Historical Map - Slice A

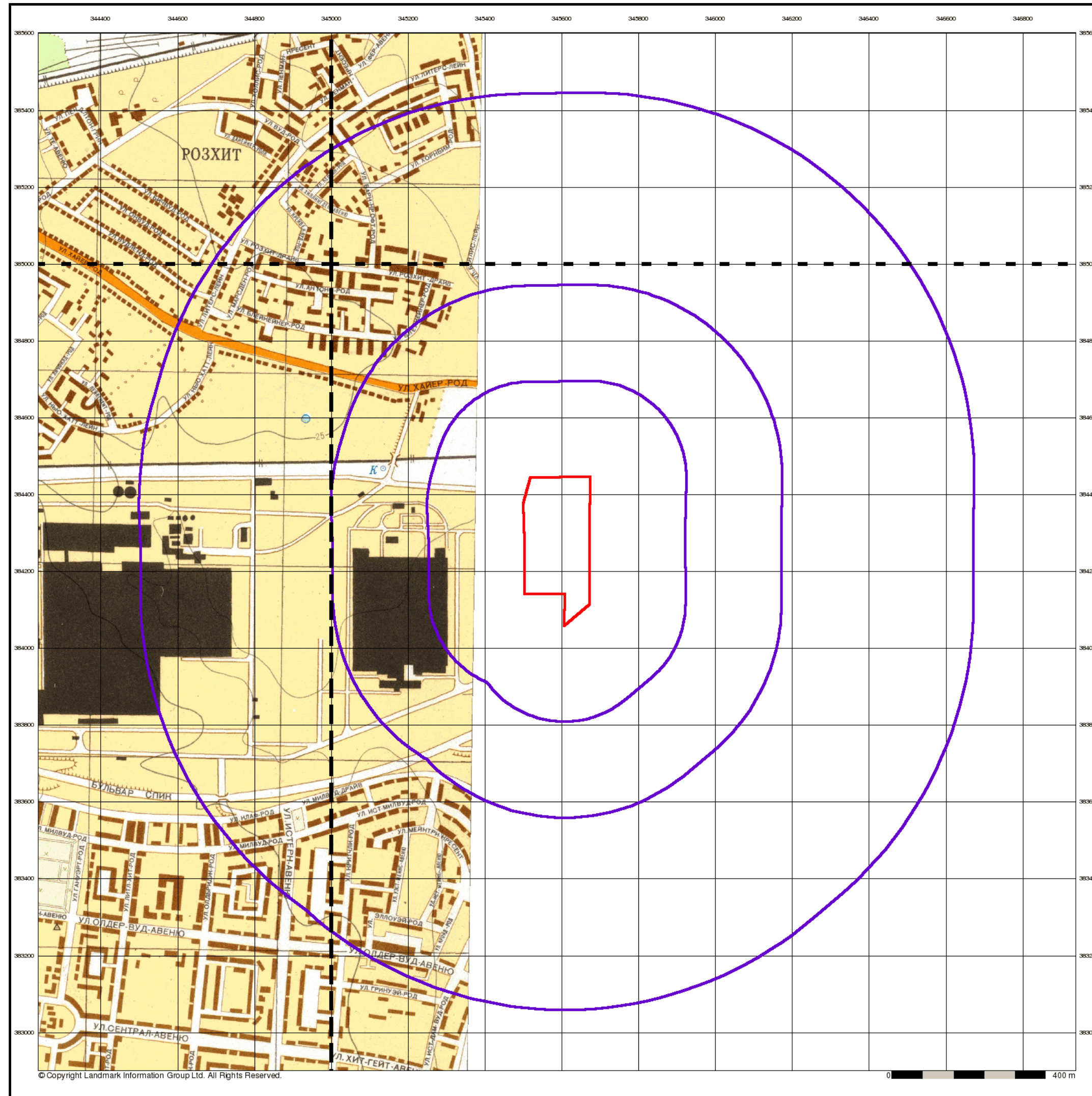


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
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Liverpool

Published 1974

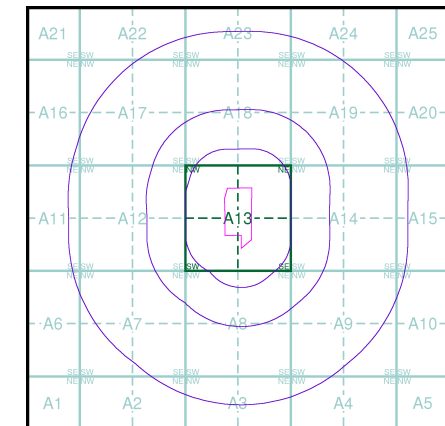
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use. They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

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Russian Map - Slice A



Order Details

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National Grid Reference: 345590, 384270

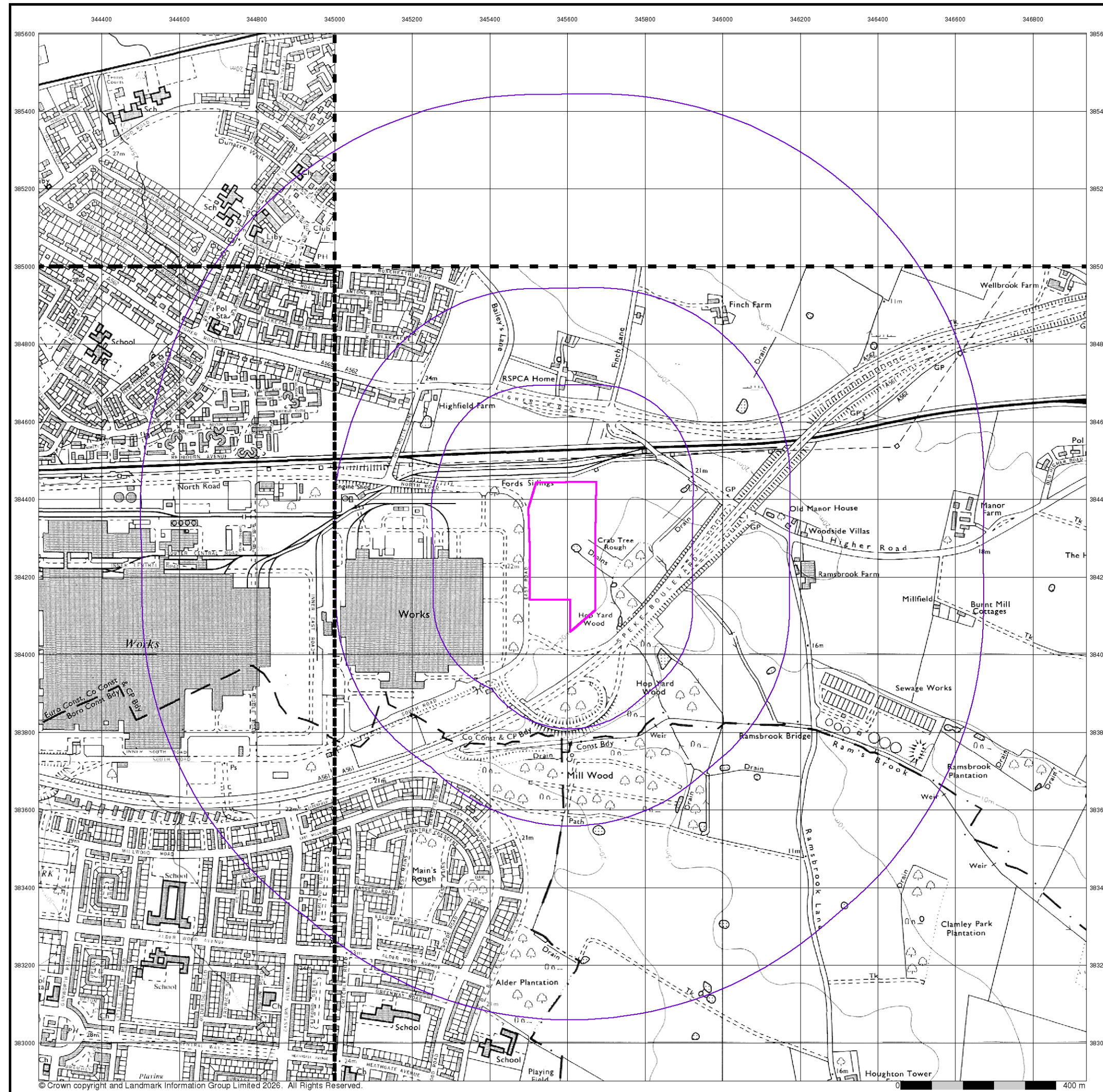
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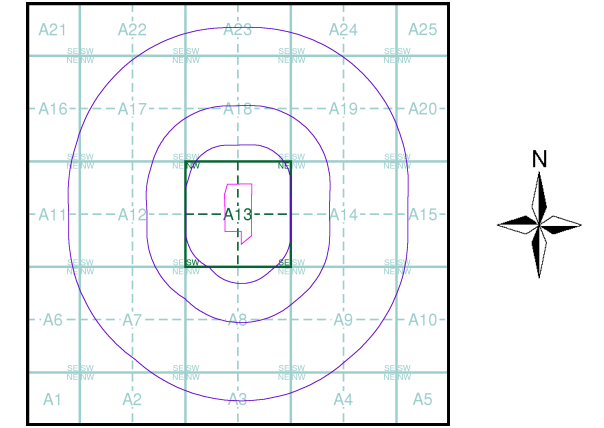
Ordnance Survey Plan Published 1981 - 1984 Source map scale - 1:10,000

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Map Name(s) and Date(s)

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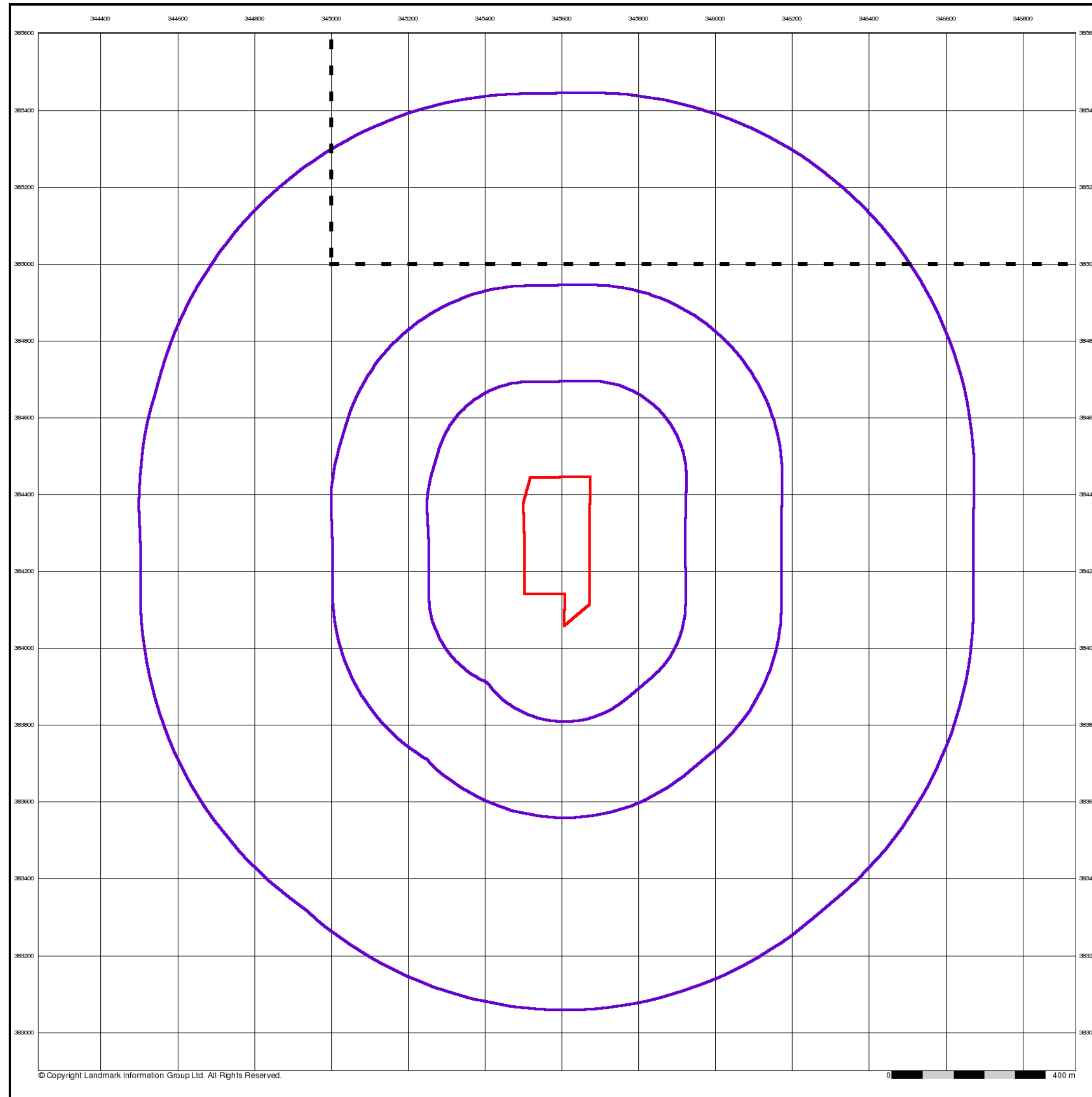
Historical Map - Slice A



Order Details
Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
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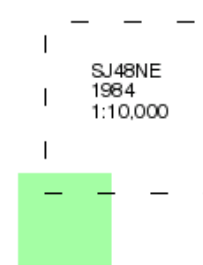
Published 1984

Source map scale - 1:10,000

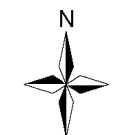
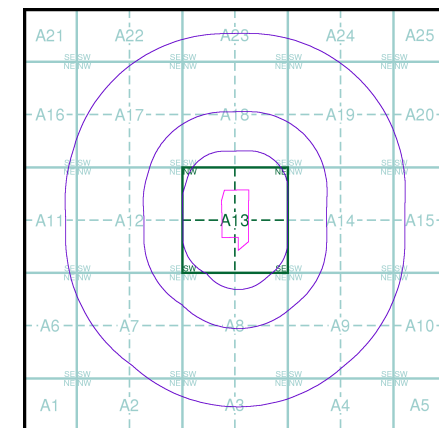
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

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Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

Order Number:

Customer Ref:

National Grid Reference:

Slice:

Site Area (Ha):

Search Buffer (m):

393191569_1_1

LW25-136

345590, 384270

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5.46

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Site Details

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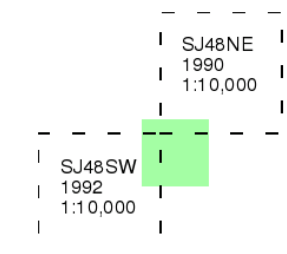
Ordnance Survey Plan

Published 1990 - 1992

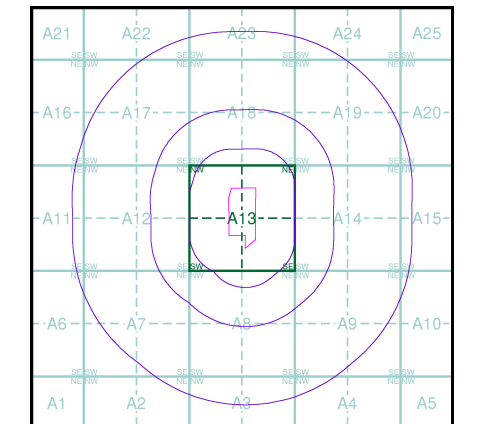
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Map Name(s) and Date(s)



Historical Map - Slice A

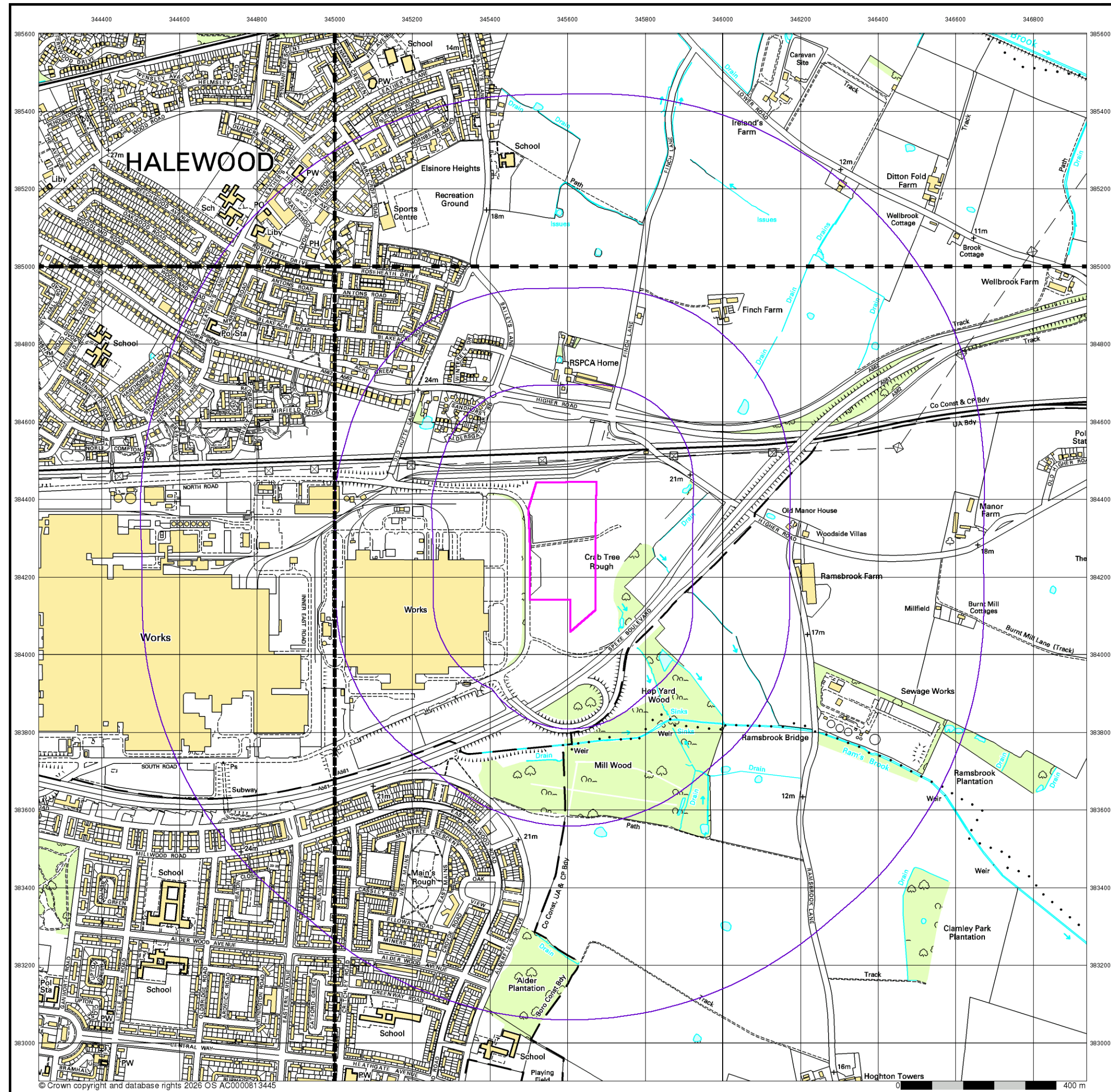


Order Details

Order Number: 393191569_1_1
Customer Ref: LW25-136
National Grid Reference: 345590, 384270
Slice: A
Site Area (Ha): 5.46
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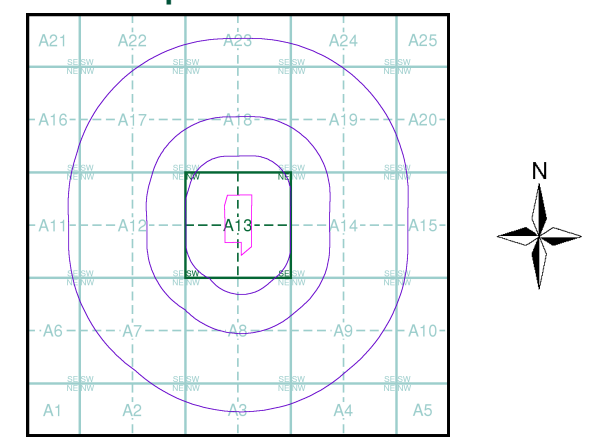
10k Raster Mapping
Published 1999
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

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SJ48SW	SJ48SE
1999	1999
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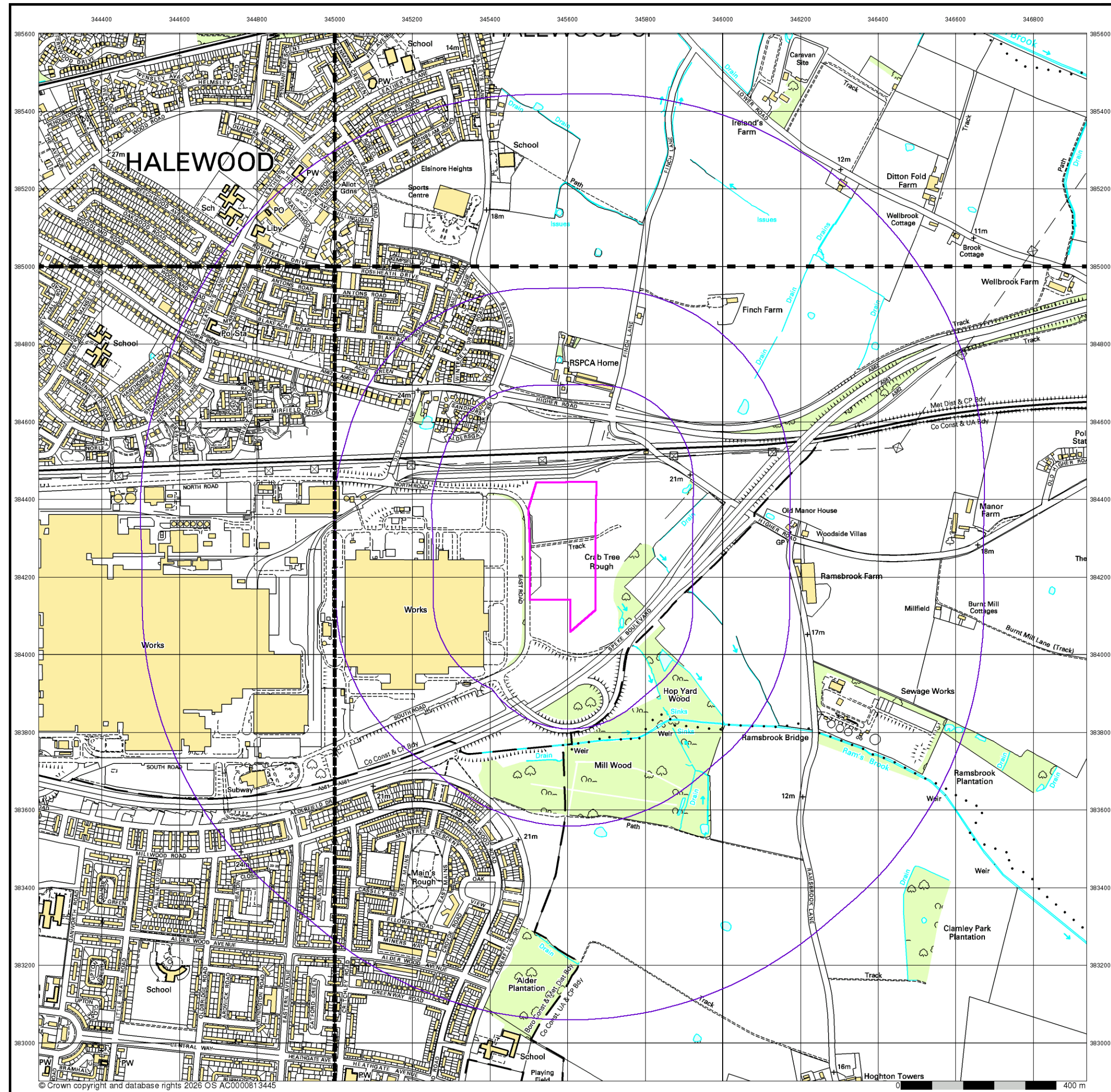
Historical Map - Slice A



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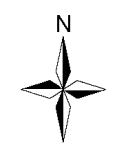
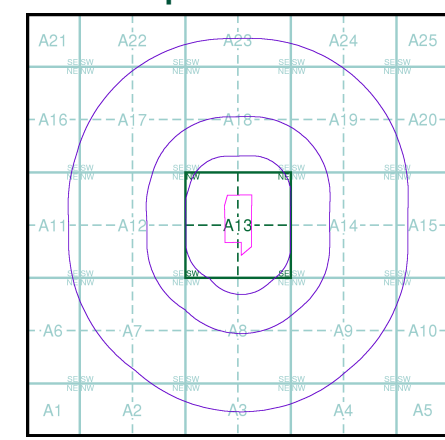
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

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Map Name(s) and Date(s)

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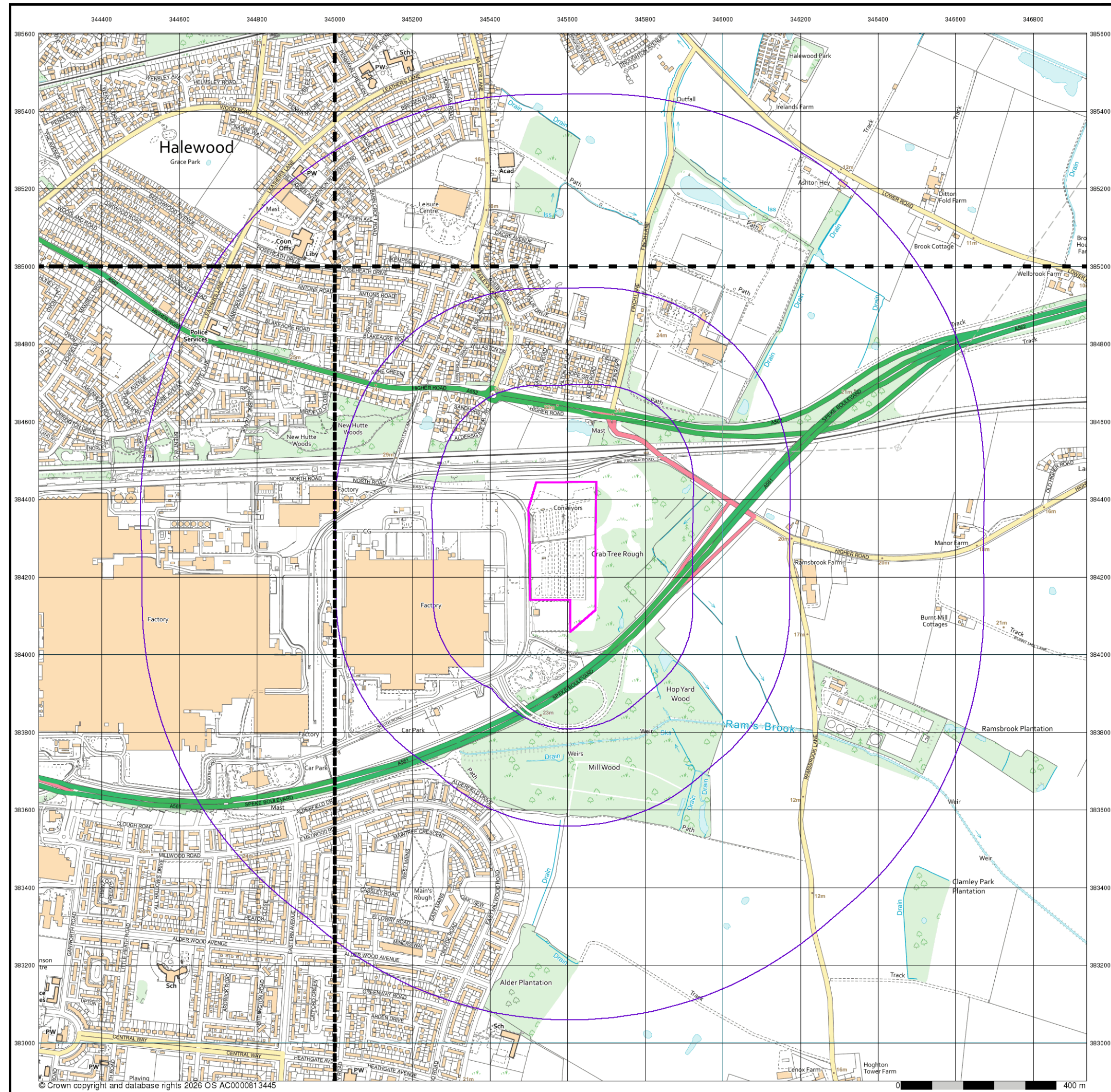
Historical Map - Slice A



Order Details
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Site Area (Ha): 5.46
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VectorMap Local

Published 2025

Source map scale - 1:10,000

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Map Name(s) and Date(s)

SJ48NW 2025 Variable	SJ48NE 2025 Variable
SJ48SW 2025 Variable	SJ48SE 2025 Variable

Historical Map - Slice A

Order Details

Order Number:	393191569_1_1
Customer Ref:	LW25-136
National Grid Reference:	345590, 384270
Slice:	A
Site Area (Ha):	5.46
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Appendix C

Site Investigation Report, East Site, Silkstone Environmental Ltd, April 2016

16015

WALDECK CONSULTING LTD.

JAGUAR- LAND ROVER, HALEWOOD

**SITE INVESTIGATION REPORT
(EAST SITE)**



April 2016

Prepared for:

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Waldeck Consulting Ltd.
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Prepared by:

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DOCUMENT ISSUE RECORD

Contract No.	16015
Client	Waldeck Consulting Ltd.
Contract	Jaguar-Land Rover, Halewood – Site Investigation
Document Title	Site Investigation Report

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REVISION RECORD

Revision	Date	Prepared By	Reviewed By	Approved By
0	15.04.16	Chris Evans	Richard Lord	Mark Barrett

Executive (Non-Technical) Summary

Silkstone Environmental Ltd (SEL) have carried out this investigation for Waldeck Consulting Ltd, following an instruction from Mr Andrew Dent. The stated purpose of the work was to carry out 3no. separate site investigations on different areas of the Jaguar-Land Rover plant in Halewood, Merseyside. Each investigation encompasses both a Preliminary Risk Assessment (Phase 1 Desk Study) and a Phase 2 intrusive investigation. This report concentrates on the area in the east of the site.

The Jaguar-Land Rover plant in Halewood, Merseyside is located approximately 13km south east of Liverpool City centre. The centre of the eastern area of the site is approximately National Grid Reference (NGR) 345606,384184.

The east site is an approximate rectangular parcel of land with a small rebate into the northwest corner. Historically the site was originally open fields with a band of trees crossing the north east corner named "Crub Tree Rough". Pond features were shown within the north and east site areas.

At some time before 1966 the woodland was cleared from the site area to reveal two northwest to south east drains, running parallel across the north east corner of the site area. These connected to a series of ponds that progressed out of the north boundary.

The drains are shown to leave the east boundary of the site flowing in a southerly direction. After 1994 the pond and drain features are no longer shown on the site and the north site boundary includes a thin trackway accessed from the north east corner.

Following a desk study and intrusive investigation the site has been attributed a low risk which continues to remain despite potential ground gasses at the site where no occupancy or buildings will be constructed. No previous ground gas monitoring records have been provided. To address this issue for any subsequent buildings at the site recommendations are given in section 8 of the report.

Further recommendations are given with respect to striping the site below the final subgrade level in order to separate each of the specific ground types prior to processing for workable compaction materials. At this time any significantly stained ground or asbestos should be quarantined within suitably impermeable containment and removed to a licenced facility by a suitably qualified contractor.

The report explains that processed granular materials will typically compact to higher density than cohesive materials and the returned materials will be a mixture of these ground types. For this reason the geotechnical testing has been undertaken upon the cohesive soils and those considered to most match natural clay recorded below the site.

Prior to any further site investigation or development work, records of services should be obtained to accurately locate the existing services on site and in the adjoining streets. Should any development of the site commence, ongoing monitoring of any sub-surface materials exposed should take place. Should any unusual, oily, brightly coloured or odorous material, or unexpected tanks and containers be encountered, then the advice of a suitably qualified specialist should be sought.

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Table 11:	Summary of Asbestos
Table 12:	Final Environmental Risk Assessment
Table 13:	Preliminary Summary

REFERENCES

- A. Contaminated Land Report 11 – Model Procedures for the Management of Land contamination. Environment Agency (September 2004).
- B. Town and Country Planning Act 1990.
- C. National Planning Policy Framework (2012)
- D. Planning Policy Statement 23 (2004)

1.0 INTRODUCTION

1.1 Brief

Silkstone Environmental Ltd (SEL) have carried out this investigation on behalf of Waldeck Consulting Ltd, following an instruction from Mr Andrew Dent. The stated purpose of the work was to carry out three separate site investigations on different areas of the Jaguar-Land Rover plant in Halewood, Merseyside. Each investigation encompasses both a Preliminary Risk Assessment (Phase 1 Desk Study) and a Phase 2 intrusive investigation. The three separate areas are as follows:

- Phase 1 – Northern area.
- Phase 2 – Eastern area.
- Phase 2 – Southern area.

This report concentrates on the Phase 2 Eastern area.

The stated purpose of the Preliminary Risk Assessment (Phase 1 Desk Study) was to assess the potential for historic contamination at the site which may adversely impact human health and/or the environment in consideration of the site's proposed end use, which is understood to be the development of a carpark.

It was also intended to provide provisional sampling and testing to assist geotechnical interpretation of the site for the purposes of carpark design.

The Phase 2 intrusive investigation involved the excavation of thirty two trial pits with associated sampling and testing.

2.0 PHASE 1 DESK STUDY

This report has been compiled in general accordance with Ref A. as a 'Preliminary Risk Assessment – Desk Study', as defined therein.

The Preliminary Risk Assessment (Phase 1 Desk Study) highlighted the requirements for the Phase 2 intrusive investigation. They were assessed as follows:

- A description of the site showing location and layout.
- A review of the site history including previous surrounding land uses.
- Determination of the environmental setting by reference to geology, mining / quarrying risks associated with hazardous gas (including radon, landfill gas, mines gas and the like), proximity to land filled ground, proximity to Control of Major Accident Hazard (COMAH) or explosive sites, hydrology, flood risk and hydrogeology.
- A site walkover and inspection.
- An assessment of anticipated ground conditions including potential contaminants.
- To provide information to assist the design of foundations and highways with basic recommendations.
- Preparation of a conceptual ground model and design of an appropriate follow on ground investigation.
- An inspection of historical and geological maps and information provided by the Local Planning Authority, Environment Agency, British Geological Survey.
- A risk assessment is given of the proposed development including an appraisal of actual and/or potential contaminant sources, pathways and receptors and a conceptual site model is provided.

Conclusions of the Phase 1 Desk Study are revised by the information presented from the Phase 2 Intrusive Investigation. No other site investigations are known have been made available to SEL.

2.1 Legislative and Regulatory Context

If land proposed to be developed is suspected to be contaminated either historically or by its current use, an investigation will be requested by the Local Authority under the Town and Country Planning Act (1990) (Ref B) and the National Planning Policy Framework (Ref C) which follows Planning Policy Statement 23 (Ref D) to determine the level of risk and if remediation is necessary. Under this regime investigations are carried out to determine if the current condition of the site is suitable for its proposed use.

2.2 Guidance and Information Sources Used Within This Report

This report has been produced in line with relevant guidance and best practice and in particular Ref. A, B, C and D. This list includes all of the sited references. It is not exhaustive and comprises only the principal references used in conducting this risk assessment.

2.3 Site Location

The site is located in the eastern part of the Jaguar-Land Rover plant in Halewood and is approximately 13km southwest of Liverpool City centre. The centre of the site is at National Grid Reference (NGR) 345606,384184.

2.4 Historical Land Use

Information relating to historical land use of the site and surrounding area has been gained from historical maps (Appendix B) and the Groundsure Environmental Report (Appendix C). The information has been summarised in Table 1 overleaf, including dates of the significant maps referred to. It is important to note that the date referred to indicates the date the feature appears on the map and not necessarily the date the actual feature was present.

In addition, the marked site boundary may appear to move with respect to successive editions. This is predominantly due to minor variations in the Ordnance Survey with time.

In summary, the site was originally shown as open fields with a band of trees crossing the north east corner named "Crub Tree Rough". Pond features were shown within the north and east site areas.

At some time before 1966 the woodland was cleared from the site area to reveal two northwest to south east drains, running parallel across the north east corner of the site area. These connected to a series of ponds that progressed out of the north boundary and measured between approximately 4m and 30m in width. The largest covering approximately 500m².

The drains are shown to leave the east boundary of the site flowing in a southerly direction. After 1994 the pond and drain features are no longer shown at the site and the north site boundary includes a thin trackway accessed from the northeast corner. The current area of concrete hardstanding is also shown within the north west of the site.

The wider site area is initially shown as fields and woodland which at the east boundary were named Hop Yard Wood. A railway has been situated beyond 100m north of the site since before ordnance survey records began and before 1907 this included a crane. In the wider area new residential developments including a school have existed since the late 1950's and the motor works with the current site layout since the early 1960's. The area currently is in use as a temporary car park to the north of the site as shown since the early 1990's.

Table 1: Historical Land Uses of the Site and the Surrounding Area

Date	Scale	Site	Surrounding Area
1849	1:10,560	Site shown as open fields with band of trees crossing the northeast corner named "Crub Tree Rough" Probable pond features shown within the north and east site areas.	Wider site area shown as fields and woodland. Boundary E: Hop Yard Wood. 100m N: Railway. 500m SW Archaeological feature.
1893	1:2,500	No significant changes.	No significant changes.
1894	1:10,560		150m S: Rams Brook.
1905	1:10,560		No significant changes.
1907	1:2,500		100m N: Crane.
1912	1:10,560		No significant changes.
1925	1:10,560		
1927	1:2,500		
1936	1:2,500		
1938	1:10,560		650m SW: New residential developments including a school.
1956	1:10,560		
1966	1:1,250	Woodland cleared from the site area. Two northwest to southeast drains are shown running parallel across the northeast corner of the site area. These leave the site's mid-east boundary and connect with further ponds east and south of the site area. Flow direction is shown as south. The drains connect to a series of ponds that progress out of the north boundary of the site, measuring between approximately 4m to 30m width. The largest is within the site area and covers approximately 500m ² . A former pond in the east site area is no longer shown.	Boundary W: Roadway and buildings resembling the current site layout. Boundary SE: Current road layout.
1967	1:10,560	No significant changes.	Boundary W: Shown as current car works.
1968	1:10,000		450m NW/SW: Extended residential developments. 500m SE: Works.
1985	1:1,250		No significant changes.
1982	1:10,000		
1991	1:10,000		
1993	1:1,250	Only the principal pond continues to be shown at the site in association with the two drains.	Boundary N: Delineated area corresponding to that currently in use as a temporary car park. This progresses into a presently inaccessible area of the study site boundary.
1994	1:1,250	Pond and drain features no longer shown at the site. North site boundary includes a thin trackway accessed from the northeast corner. The current area of concrete hardstanding is shown in the northwest corner of the site.	
2002	1:10,000	No significant changes.	No significant changes.
2010	1:10,000		
2014	1:10,000		

2.5 Site Description

A site walkover was carried out on the first day of the Phase 2 intrusive investigation on 14th March 2016. Photographic records are presented at Appendix D.

The site is an approximate rectangular parcel of land with a small extension beyond the north-east corner. It is predominantly overgrown with small trees, bushes and areas of bog, some of which were too soft to walk on. Loose blocks of concrete and areas of gravel are obvious throughout the sites surface. A paved concrete area of hardstanding is situated within the north west corner and this was used for access.

The site is approximately at the level of the Jaguar-Land Rover ring road which passes the east boundary and it continues east from the road behind extensive wire and post fencing. The fencing runs behind the area of concrete hardstanding located at the north east corner of the site, the front of which has additionally been secured with herras fencing that has locally been concreted into the ground. The east part of the concrete is surrounded by a thin elevated bed of gravel. To the south of this fencing was opened to make access for the investigation.

Within the site the north area is defined by spoil piles and areas containing large trees that were inaccessible to sampling. This area contained borehole covers indicating former ground investigation. Beyond this an area of higher ground is in use as a temporary car park. The spoil piles form a small rebate into the north east corner of the site where they comprise site scraped material.

The east boundary of the site is currently undefined but was considered during the investigation to correspond to an area extensively covered by low trees. This adjoining land slopes steeply down eastward. In the south east part of the site the adjoining slope looked to be made up of layers of fill material and at this point ran down to meet a stagnant water course.

The south boundary of the site runs alongside an access slip road down to Speke Boulevard a principal carriageway running at several metres below site level northwest passed the site.

Land in the south west corner of the site has clearly been engineered and exists as an embankment of two to three metres above the adjoining land.

Land in the south west of the site was strewn with superficial rubbish that looked to have been thrown over the fence and concrete drainage features were constructed along the east boundary of the site.

2.6 Geology

Information relating to the geology of the site has been gained from various sources and has been summarised in Table 2 below.

A Coal Authority Mining Report was not considered necessary for the site.

Table 2: Geological Summary

Maps / Publications Referenced	The Geological Survey Map of England and Wales, Sheet 97, Warrington, Solid and Drift, 1:50,000 scale. BGS Geoindex website.
Drift Geology	Recorded as Till comprising unlithified clay, silt, sand and gravel.
Made Ground	None recorded within the mapped site area but encountered within evert trial pit at the site. Most notably beyond the depth of trial pits in the north of the site in areas recorded as landfill.
Solid Geology	Shown as the Kinnerton Sandstone Formation.
Dip of Solid Strata	Slight eastward.
Faults	None shown.
Quarrying / Mining/Natural Cavities	Historical ground surface workings are recorded within the north site area as (Ponds) with no connected origin.

2.6.1 Historical Borehole Data

Twenty three historical boreholes are recorded within 250m of the site boundary by the British Geological Survey (BGS) five of which are within the site area. These all represent previous trial pits at the site and their information is recorded as confidential.

2.6.2 Natural Ground Subsidence Risks

The Groundsure Report considers other Natural Ground Subsidence Risks such as shrinking or swelling of clay, landslides, ground dissolution, compressible deposits, collapsible ground and running sand.

A moderate risk is considered to exist with respect to compressible deposits beyond 43m east of the site corresponding to alluvial deposits. These are not considered to effect the proposals. In all respects either a very low or negligible risk has been attributed.

2.7 Hydrogeology

Superficial deposits are recorded below the site as Till which may comprise clay, silt, sand or gravel. This is attributed as a Secondary Aquifer with undifferentiated layers. This type of aquifer definition is attributed where it is not possible to attribute either category A or B. In general these aquifers have previously been designated both as minor and non-aquifers in different locations due to the variable characteristics. Soils interpreted as natural ground below the site were predominantly of friable clay which by its very nature is impermeable.

The bedrock geology is however recorded as a Principal aquifer. Principal aquifers are defined as geology of high intergranular and / or fracture permeability, usually providing a high level of water storage and may support water supply or river base flow on a strategic scale. These are generally aquifers formerly classified as major aquifers.

The site is within a Zone 3 Total Catchment Source Protection Zone and as such groundwater will be considered a potential receptor.

There are no groundwater abstraction licences within 815m of the site boundary and no surface water abstractions within 856m or potable water abstractions within 2km.

No licenced discharge consent are recorded within 500m from the site boundary.

2.8 Hydrology

Filled ponds are indicated within the site area and historical mapping information infers that these connect with a tertiary river located at 18m east of the site boundary, which in turn connect to a detailed river network including a lake/ reservoir located 24m east and a primary river named "Ram's Brook" located at 227m south of the site.

According to the Groundsure report the site is not within 250m of an Environment Agency Zone 2 or 3 Flood Plain.

Flooding has been attributed a very low on site risk by the Environment Agency.

Information supplied by the British Geological Survey (BGS) considers that a limited potential exists for ground water flooding which may occur from either shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater flooding).

Where a limited potential is attributed, unless other relevant information e.g. records of previous flooding suggests groundwater flooding has occurred before in this area, you need take no further action. However this information is attributed a low confidence rating.

There are no flood defences, areas benefitting from flood defence or areas used for flood storage within 250m of the site boundary. Prior to any new developments at the site regulators may require a standalone flood risk assessment in addition to this report.

2.9 Landfills and Licenced Waste Management Facilities

The north of the site is recorded as an Environment Agency Historical Landfill. This is Crab Tree Rough, Knowsley, Merseyside, operated by Ford Motor factory. The EA records do not record any start or finish date to landfill. However the waste type is recorded by the EA website as “Industrial”, which is waste from a factory or industrial process. It excludes waste from mines, quarries and agricultural wastes.

No other Landfills or waste sites are recorded within 500m of the site boundary.

2.10 Ground Gasses

The property is not in a Radon Affected Area defined by the Health Protection Agency, as less than 1% of properties are above the Action Level. Basic radon protective measures are not considered necessary under BR211 Radon Guidance on Protective Measures for New Dwellings.

2.11 Other Potentially Significant Information Relating to the Site

Historically there are three records of infilled land within the north and east site area, which correspond to filled ponds. There are two contaminative uses recorded within 50m of the site boundary. These correspond to the several hectares covered by the Jaguar Land Rover plant that is also listed under historical industrial sites, historical garages and motor vehicle repair. Railway sidings come to within 17m west of the defined site boundary and many of these are shown to be underground within railway tunnels. Tanks are recorded beyond 295m west and substations beyond 301m north.

The study site is recorded under COMAH/NIHHS where the defined licence extends out of the fenced Jaguar Land Rover plant. This notification provided HSE with details about hazardous sites and help to define priorities in inspection programmes typically undertaken by HSE or the emergency services. This record will not be affected by the proposals.

Three current industrial sites are recorded beyond 92m from the site boundary. These all relate to electricity pylons or associated structures and are not considered to effect the study site.

Two recorded pollution incidents have been identified within 500m of the site boundary. The most recent of which was October 2005. This was a Category 2 Significant impact to water of sewage materials described as sludge. All other records were of minor or no impact for each of the pollutant categories. In consideration of the time since the principal event these records are not considered to affect the study site.

The defined site area falls outside the Liverpool Manchester and West Yorks Greenbelt and beyond “Millwood & Alder Wood” which is classified as a Local Nature Reserve beyond 53m southeast of the site boundary.

3.0 INITIAL RISK ASSESSMENTS AND CONCEPTUAL SITE MODEL

3.1 Potential Pollutant Linkages

To determine the potential for a pollutant linkage to be present the preliminary risk assessment process involves the identification of potential sources, pathways and receptors. A pollutant linkage can only be present if all three of these factors are involved. There must be a source of contamination present, a receptor for the contamination to impact on and a pathway for the contamination to reach the receptor.

3.2 Potential Sources of Contamination

Potential sources of contamination and associated contaminants which may be present on site are shown in the table below.

Table 3: Potential Sources of Contamination on Site

Potential Sources	Potential Contaminants
On Site	
Sites former use as a landfill. Filled ponds and water features, Localised spillages.	Heavy metals such as Iron, Arsenic, Cadmium, Chromium, Nickel, Copper, Lead, Mercury, Zinc. Sulphates/Sulphides. Polycyclic Aromatic Hydrocarbons (PAHs) Petroleum Hydrocarbons (TPH) Asbestos Landfill Gasses.
Off Site	
Proximity of a local factory, railways, Potential contaminant associated with the neighbouring site's historical development.	Landfill gases. Heavy metals such as Iron, Arsenic, Cadmium, Chromium, Nickel, Copper, Lead, Mercury, Zinc. Sulphates/Sulphides. Polycyclic Aromatic Hydrocarbons (PAHs) Petroleum Hydrocarbons (TPH)

3.3 Potential Pathways and Receptors

3.3.1 Human Health

- Chronic Risks

Potential exposure pathways are based on those in the Conceptual Exposure Model for human health which is detailed in Contaminated Land Report 10.

The chronic risks to human health take into account those risks to end users of the site. The proposed end use of the site is considered to be a car park area.

- Ingestion of soil
- Ingestion of dust
- Dermal contact with soil
- Dermal contact with dust
- Inhalation of gasses and vapours
- Inhalation of fugitive soil dust
- Inhalation of fugitive building dust
- Migration of contaminants through soil / groundwater

- Acute Risks

Acute risks are considered with respect to construction workers / engineers on site.

NB: During any intrusive ground works appropriate health and safety measures should be adopted to protect site workers from any potential risks associated with contamination in the ground. This should include the use of any personal protective equipment necessary and a general awareness of any possible risks to safety and human health on site.

3.3.2 Controlled Waters

- Groundwater

The site is underlain by the Till deposits of clay, silt, sand or gravel above sandstone is classified as a Principal Aquifer. The site is within a source protection zone and therefore the groundwater will be considered a receptor.

- Surface Water

Local surface water features are recorded historically within the site area connecting to features beyond the sites east boundary. Consequently we would also consider that surface water is a significant receptor.

3.4 Initial Conceptual Site Model

Based on all the information gained in previous sections of this report the Initial Conceptual Site Model (ICSM) identifies the potential pollutant linkages which may exist on the site. Unexpected contaminated material may be encountered during the site preparation and may have the potential to impact on various receptors including human health of site end-users and controlled waters.

Table 4: Initial Conceptual Site Model

Potential Pollutant (Source)	Potential Linkage (Pathway)	Receptor
Sites former use as landfill. Industries local to the site.	Inhalation of soil gas, vapours or dust.	Construction / maintenance workers.
	Ingestion of, and dermal contact with, contaminated soil or dust.	Site end-users.
	Migration of soluble contaminants.	Adjoining Watercourses /groundwater

There was no evidence of any significantly contaminated material on the site surface at the time of the visit. From the available information the initial conceptual model is presented in Table 5 below:

3.5 Initial Environmental Risk Assessment

This section aims to expand the ICSM to assess the level of risk for each potential pollutant linkage.

Risk is a combination of the 'likelihood' of an event occurring and the magnitude of its 'consequences.' Therefore, in order to assess risk, both the likelihood and the consequences of an event must be taken into account. SEL has adopted guidance provided by CIRIA C552, for use in the production of risk assessments.

The likelihood of an event can be classified on a four point system using the following terms:

- **Highly Likely:** The event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution;
- **Likely:** It is probable that an event will occur or circumstances are such that the event is not inevitable but possible in the short term and likely over the long term;
- **Low Likelihood:** Circumstances are possible under which an event could occur but it is not certain, even in the long term, that an event would occur and it is less likely in the short term;
- **Unlikely:** Circumstances are such that it is improbable the event would occur even in the long term.

The terms and definitions relating to severity are:

- **Severe:** Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land,' DETR 2000);
- **Medium:** Chronic damage to human health ('significant harm' as defined in 'Draft Circular on Contaminated Land,' DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land,' DETR 2000);
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land,' DETR 2000). Damage to sensitive buildings, structures or the environment; and
- **Minor:** Harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the likelihood of an event occurring and its severity have been classified, a risk category can be assigned as shown in Table 6 below:

Table 5: Risk Classification System from CIRIA C552

Probability	Consequences			
	Severe	Medium	Mild	Minor
High	Very high	High	Moderate	Moderate / Low
Medium	High	Moderate	Moderate / Low	Low
Low	Moderate	Moderate / Low	Low	Very Low
Unlikely	Moderate / Low	Low	Very Low	Very Low

The pollutant linkages from the ICSM and resulting risks are considered in the table below:

Table 6: Initial Environmental Risk Assessment

Receptor	Potential Pollutant Linkage	Estimated Degree of Risk to Receptor
Site Users	Inhalation of soil gas, vapours or dust.	Moderate / Low
	Ingestion of, and dermal contact with, contaminated soil or dust.	Moderate / Low
Construction / maintenance workers.	Inhalation of soil gas, odours or dust.	Moderate / Low *
	Ingestion of, and dermal contact with, contaminated soil or dust.	Moderate / Low *
Surface water	Migration of soluble contaminants.	Moderate / Low
Groundwater		Moderate / Low

* Assumes basic PPE is used.

The initial pre-site risk assessment attributed **Moderate / Low** risk based on the existing land use and condition. This was subsequently reappraised following a site walkover and the results of investigation at the site.

4.0 FIELDWORK

4.1 Scope of Site Investigation

The fieldwork, carried out between 14 March and 16 March 2016, comprised thirty two trial pits, and four dynamic probes.

The positions were selected and set out by SEL, the locations are shown on the Exploratory Hole Location Plan at Appendix A. Positions were adjusted where necessary to take account of trees or inaccessible ground.

4.2 Site Investigation Methodology

The site investigation was supervised by a suitably qualified SEL Engineer. The exploratory holes were logged by an Engineer in general accordance with the recommendations of BS5930: 2015. All exploratory hole logs are presented in Appendix B.

Prior to intrusive investigation the available buried service records were consulted followed by a services scan carried out using a Cable Avoidance Tool (CAT) by a suitably trained and qualified person.

4.3 Trial Pits

The trial pits were excavated using a mechanical excavator and were approximately 2.00m by 0.70m in plan area. Disturbed, bulk soil samples and contamination samples were recovered from the trial pits at regular intervals and to represent each ground type.

Prior to backfilling with compacted arisings the trial pits were photographed for record purposes; the photographs are presented in Appendix B.

4.4 Dynamic Probing

It was intended that dynamic probe holes would be used to interpret variations in near surface ground density with depth, however the site proved to be irregular to permit the safe use of the prescribed rig in more than four locations. The dynamic probes were drilled using an Archway Competitor tracked rig which uses a chain driven drop weight to drive the dynamic probe rods.

Where undertaken they were adjacent to the trial pits and numbered with a corresponding number. The dynamic probing was carried out using the super heavy test set up complying with the DPSH-B apparatus of BS EN ISO 22476-2 (utilises a 63.5kg weight falling 0.75m driving a 50.5mm diameter cone). The dynamic probe logs are presented behind the corresponding trial pit logs in Appendix B.

5.0 LABORATORY TESTING

Samples for potential geotechnical testing were transported to a geotechnical testing laboratory and those for potential contamination testing were sent to an accredited chemical testing laboratory. Geotechnical and contamination tests were scheduled by SEL.

5.1 Geotechnical Analysis

Geotechnical laboratory testing was generally carried out in accordance with BS1377: 1990, Methods of Test for Soils for Civil Engineering Purposes, unless indicated otherwise. The results are reported in tabular and/or graphical form and included as Appendix C of this report. The table below summarises the geotechnical laboratory testing carried out.

Table 7: Geotechnical Laboratory Testing Summary

Test	No. of Tests
Moisture Content	9
Atterberg Limits	6
Particle Size Distribution	9
Dry Density / Moisture Content Relationship (Compaction) with CBR Correlation	6

5.2 Contamination Analysis

Contamination testing was carried out in accordance with MCERTs/UKAS standards. The results are reported in Appendix C of this report. Twenty six soil samples and four water samples were tested, for the following suite of contaminants:

Arsenic, cadmium, chromium (total), lead, mercury, selenium, copper, nickel, zinc, speciated polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (banded TPH), organic matter, soluble sulphate and pH. In addition eight of the samples representing appropriate material were screened for the presence of asbestos.

6.0 GROUND CONDITIONS

6.1 General

The exploratory holes were logged by an Engineer and the ground conditions encountered are detailed on the logs contained in Appendix B and are summarised below. The geology was generally found to comprise topsoil, over made ground and in the south of the site locally occurring sandy gravelly clay with the appearance of natural boulder clay.

6.2 Topsoil

Clean definable topsoil was not encountered to significant depths at any of the trial pit locations. Never the less site scraped materials had been separated and placed in piles above the location of trial pit TP28 and this was described as Made Ground of light brown sandy gravelly clay with roots. The gravel component comprised fine to coarse angular to sub-rounded brick slate and quartzite.

6.3 Granular Made Ground

Granular made ground described as grey or red brown sand, sandy gravel, gravelly cobbles or boulders was encountered in the near surface from ground level in trial pits TP01 to TP05 inclusive TP10, TP12 to TP15 inclusive TP17, TP18, TP20 to TP23 inclusive and TP29 that were located in the west and south of the site.

Material matching this description was also encountered below near surface cohesive ground in trial pits TP24, 32 located in the east of the site where in both cases it progressed below 3.50m corresponding to the maximum penetration of the trial pits.

Material described as sand was ash based in trial pits TP18, TP21. Other granular material typically comprised remnant building waste and included brick, concrete, sandstone, glass, plastic fragments, tarmac, wire or metal and rare timber, rags, paper, slag, tar, limestone, breeze block, ceramic, land drain fragments and possible asbestos.

The cobbles and boulders were most commonly concrete or brick which had been made into sets or probable lengths of historical walling as noticed in trial pits TP01, 03, 05, 12, 13, 18 and 32.

This stratum extended to depths of between 0.20m corresponding to trial pit TP17 and below 3.50m that corresponded to the maximum penetration of trial pits TP24 and TP32.

6.4 Cohesive Made Ground

Cohesive made ground was more typically encountered at depth within trial pits and underlay granular made ground in the east and centre of the site corresponding to trial pits TP02, 03, 17 and 29.

In trial pit TP02 this was typically so clean that it was initially interpreted as natural ground. However below 1.80m at this location, it became red brown sandy gravelly clay in which the granular constituents were as those for granular made ground.

Similar cohesive made ground was encountered from ground level in trial pit TP06, 07, 08, 09, 11, 13, 16, 19, 24, 25, 26, 27, 28, 30 and 31 that were predominantly located in the south and east of the site.

In trial pit TP24 and TP32 this material overlay granular made ground to 0.70m and 0.60m respectively.

6.5 Hard Ground

Hard ground was encountered as concrete or brick layers in trial pits as described in the table below.

Table 8: Hard Ground Summary.

Trial Pit	Depth (m)	Range
TP01	0.70	Trial pit extended beyond.
TP03	0.15 to 0.60	Layer of bricks (Penetrated)
TP07	0.60 to 0.80	Layer of bricks (Penetrated)
TP10	0.50	Layer of bricks (Could not be penetrated)
TP12	0.50 to 1.40	Layer of bricks (Penetrated by extending pit)
TP16	2.30	Trial pit terminated.
TP31	1.10	Impenetrable concrete.

6.6 Probable Natural Drift Deposits

Stiff fissured red brown sandy gravelly clay in which the granular constituents consisted of natural materials that were sub-angular to sub-rounded and continued from below the base of the excavations was interpreted in trial pits TP01, 03, 04, 05, 06, 07, 09, 11, 20, 23 and 29.

It should be noted that all of these locations were within the south and east part of the site. The encountered depth was between 1.10m in trial pit TP01 to 3.00 in trial pit TP11 showed a likely correlation with former site ground level at each locality.

Made ground progressed below the maximum penetration of the trial pits in all other locations which varied in depth between 0.50m in TP10 to 3.50m in trial pits TP13, 24, 25 and 32.

6.7 Groundwater

In most of the exploratory holes there was either slight seepages or no groundwater encountered, the significant water strikes are presented below;

Table 9: Groundwater Records

Hole ID	Depth (m)	Comment
TP03	1.00	Sampled
TP05	2.20	Not sampled
TP06	1.50	Not sampled
TP13	1.00	Sampled
TP14	1.00	Not sampled
TP15	1.20	Not sampled
TP16	1.70	Sampled
TP22	0.90	Not sampled
TP24	1.10	Sampled. (Slightly oily)
TP30	3.20	Not sampled.
TP32	1.00	Not sampled

6.8 Laboratory Test Results

Particle size distributions were carried out on these stratum and the results generally confirmed the engineering descriptions and showed little variation for cohesive material across the site.

Table 10: Laboratory Testing Results Summary

Test		Units	No of Tests	Results		Comment
				Min	Max	
Moisture content		%	9	12	17	-
Liquid Limit		%	6	25	30	Low plasticity across the site
Plastic Limit		%	6	14	16	
Plasticity Index		%	6	11	14	
% Passing 0.425mm sieve		-	6	71	87	-
Dry density / moisture content relationship	Maximum Dry Density	Mg/m ³		1.88	2.09	-
	Optimum Moisture Content	%		9	15	-
CBR Range 4.5Kg	Heavy compaction. (At optimum moisture)	%		23.8	42.4	
CBR Range 2.5Kg	Light compaction (At optimum moisture)	%		6.5	12.2	

7.0 DISCUSSIONS AND RECOMMENDATIONS

7.1 Proposed Development

It is understood that the proposed site is to be designated for car parks and access roads. At the time of writing there was an outline proposal for the site layout, which has been included at Appendix A.

7.2 Site Preparation

The site will first need to be stripped of vegetation and localised near surface concrete. The contractor will typically follow a highways specification which requires to establish a uniformly dense subgrade.

From the materials encountered this will likely comprise reworked clay and granular made ground. The resulting subgrade will need to have removed any soft spots or areas of hard ground.

It will therefore be necessary to strip the site below the final subgrade level in order to separate each of the specific ground types prior to processing for workable compaction materials. At this time any significantly stained ground or asbestos should be quarantined within suitably impermeable containment and removed to a licenced facility by a suitably qualified contractor.

Processed granular materials will typically compact to higher density than cohesive materials and the returned materials will be a mixture of these ground types. For this reason the geotechnical testing has been undertaken upon the cohesive soils and those considered to most match natural clay as described below.

Capping may not be required where a constant CBR above 5% can be achieved for the subgrade. Following compaction in thin layers typically less than 250mm, it would be usual to validate the consistency of this by use of plate load tests.

7.3 Pavement Design

In-situ CBR tests were not carried out however it was intended to compare dynamic probe results to the soils encountered. Unfortunately the dynamic probe rig could not be operated on the undulating ground at the site and values were therefore only provided for trial pits TP01 to TP04.

The material at these locations was made ground to depths of between 1.10m and 3.00m which by its very nature is variable in nature however clay ground interpreted as natural material in these locations typically showed current values typical for CBR's at or greater than 1.3 and less than 3.2.

7.4 Protection of Buried Concrete

Minor amounts of concrete may be laid at the site for minor structures and or ground improvements. The site is classed as brownfield and groundwater is assumed to be static. Soil pH values varying from 7.8 to 9.7 were recorded and the groundwater pH result was between pH 7.29 and 7.85. From these results a 'Characteristic Value' of 7.3 is derived.

The water-soluble sulphate results range from <10mg/l to 45mg/l where 10mg/l is the limit of detection. The groundwater sulphate results were between 15mg/l and 322mg/l. Groundwater is generally the agent by which aggressive chemicals reach the concrete, the 'Characteristic Value' is taken as 322mg/l and this value falls into Design Sulphate Class DS-1 in Table C2 of BRE Special Digest 1 (SD1).

Because made ground or pyritic soils may exist at the site. Total potential sulphate was also considered for seven samples. These values all fell below the permissible value of 0.3% for the ascribed concrete class.

The Aggressive Chemical Environment for Concrete (ACEC) class is AC-1s.

7.5 Contamination

The initial screening risk assessment has been carried out using the Atkins Atrisk-soils™ system, to which SEL are subscribers. This system comprises a list of Site Specific Values (SSV) for different land uses; the SSV's being values below which there is no significant risk for the stated land use.

Due to copyright restrictions, the complete set of Atkins Atrisk values cannot be published herein, therefore only values applicable to determinants which have exceeded the SSV's are included.

The Atrisk SSV values for "Open Space Land Use" with 1% Soil Organic Matter and a sand soil type" have been selected as those judged to most appropriate, while those for similar soil type for "Residential with the consumption of home grown produce" were considered a more conservative judgment.

A conceptual (source-pathway-receptor) model is required for the site in order to establish a risk. In this instance, the model would simply consist of any contamination (the 'source') in the ground passing through a 'pathway' (direct contact, or by plant uptake from a derivative soil) to reach a 'receptor' (human, site operative, resident or visitor). This risk assessment considers the 'source' term initially; where the source term, through screening, is not considered to present a significant risk then further modelling is not required. If the initial screening assessment does not conclude that a significant risk exists at the source term, then further work on this model is not required.

In comparison to the guidelines for open spaces all of the soil samples were within acceptable levels. The vast majority of contaminants fell below their respective guideline value applied to the more conservative residential values. The exceptions were one minor exceedance of arsenic of 51mg/kg where the guideline value for arsenic is 32mg/kg, and three minor exceedances of Benzo(a)pyrene between 1.62mg/kg and 0.87mg/kg for which the residential guideline is 0.818mg/kg. In all cases the site average values were well within the residential use guideline.

With respect to groundwater the Atkins Atrisk system currently only provides values of four of the potential PAH contaminants. These values all fell within an acceptable level with exception of one minor elevation for Benzo(a)anthracene of 0.09ug/l where an acceptable value of 0.0536ug/l is considered appropriate.

This single elevation is not considered significant where the site average fell within the guidelines. The other values were compared against those for drinking water as provided by the Drinking Water Inspectorate Guidelines of drinking water Quality 2010 which predominantly provides guidelines for metals.

The vast majority of these values fell within drinking water standards but showed similar sample specific peaks for nickel, cadmium and arsenic and most notably lead.

Lead recorded one significantly elevated value corresponding to trial pit TP24 of 1620ug/l. However disregarding the single elevation of lead the site wide averages fell within 3.5 times the drinking water value and in all cases was typically within this range for each single value.

It should however be noted that no testing has been undertaken of the adjoining water course which was stagnant during the site walkover. It was also not possible to excavate with certainty the filled ponds and drainage historically recorded at the site.

7.6 Ongoing Monitoring

The results for soil and water suggest that near surface excavations of the site is unlikely to mobilise significant contaminants to the adjoining water course, however the very nature of this site contained appreciable pockets of localised material and it is therefore recommended that continual monitoring of the excavations and water course is undertake throughout the site works.

Site staff and plant operators will be required to be issued with oil spillage equipment as required by regulators for sites of this kind. Basic ground gas monitoring will also be a requirement during the construction of drains and throughout any deep excavations.

7.7 Removal of Materials from Site

No testing for transport of materials to landfill was undertaken within the scope of the site works. However the majority of made ground materials at the site consistently gave hydrocarbon values that would deem them an inert classification within more extensive Waste Acceptance Criteria (WAC) leachate testing.

This leachability testing often provides a fraction of mobile contaminant, in comparison to the total amount present. In this respect it seems likely that the metals present in the soils are also likely to prove acceptable to inert landfill.

Material removed from site is unlikely to be considered contaminative, however, contractors would require additional (WAC) testing as a means to classify the appropriate treatment and processing of the material.

7.8 Asbestos

Asbestos testing was also undertaken for eight samples corresponding to most suspect materials. Minor amounts were detected in the three following samples.

Table 11: Summary of Asbestos

Trial Pit	Depth (m)	Asbestos type	Interpreted
TP07	0.50	Chrysotile Loose Insulation	Visual inspection
TP11	1.10	Chrysotile Loose Fibres	Found under microscope
TP21	0.30	Chrysotile Loose Fibres	Found under microscope

Asbestos is not considered typical at the site but the random nature of fill suggests that a risk remains that isolated pockets may be found during the processing of site soils. These would require to be quarantined within suitable containers and removed by a suitably qualified party.

7.9 Final Conceptual Site Model

The investigation and site walkover has not shown there to be any significant variation from the initial Conceptual Site Model (CSM). Consequently the Final Environmental Risk Assessment is presented below.

7.10 Final Environmental Risk Assessment

This section aims to expand the CSM to assess the level of risk for each potential pollutant linkage.

Table 12: Final Environmental Risk Assessment

Receptor	Potential Pollutant Linkage	Estimated Degree of Risk to Receptor
Site Users	Inhalation of soil gas, vapours or dust.	Low *
	Ingestion of, and dermal contact with, contaminated soil or dust.	Low
Construction / maintenance workers.	Inhalation of soil gas, odours or dust.	Low **
	Ingestion of, and dermal contact with, contaminated soil or dust.	Low ***
Surface water	Migration of soluble contaminants.	Low ****
Groundwater		Low

- * Presumes that drains would be self-venting and a ground gas risk assessment would be commissioned prior to any subsequent buildings at the site.
- ** Presumes ground gas monitoring during excavations or the construction of drains.
- *** Presumes basic PPE will be worn.
- **** Presumes that ongoing site screening of site soils and groundwater will take place throughout the excavation and development

A low risk is considered for the site and current proposals. With respect to potential ground gasses at the site no ground gas monitoring records have been provided. In the event of future building development at the site and to address this issue, recommendations are given in section 8 of this report below.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This report has reviewed the available data for the study site. Based on the historical land uses within and local to the site alongside the intrusive investigation the Initial Environmental Risk Assessment has derived risk ratings of Low for the site where no buildings will be constructed.

If buildings are to be developed at a later date it is therefore recommended that a further Phase 2 intrusive investigation is undertaken to determine the contamination status of the site. This would apply with respect to ground gasses or where site drains will not be self-venting.

8.1 Site Requirements

For the current proposals the results for soil and water suggest that near surface excavations of the site is unlikely to mobilise significant contaminants to the adjoining water course, however the very nature of this site contained appreciable pockets of localised material and it is therefore recommended that continual monitoring of the excavations and water course is undertake throughout the site works. Site staff and plant operators will be required to be issued with oil spillage equipment as required by regulators for sites of this kind.

Where any further investigation or development of the site commence ongoing monitoring of any sub-surface materials exposed should take place. Should any unusual, oily, brightly coloured or odorous material, or unexpected tanks and containers be encountered, then the advice of a suitably qualified specialist should be sought.

It is also required that site operatives continually monitor ground gasses throughout excavation and during the laying of any drains. Drains will require to be self-venting.

8.2 Building Development

In the event that subsequent building development takes place at the site a ground gas risk assessment would be required. The objectives of an investigation are to:

- Clarify the Initial Conceptual Site Model.
- Clarify the Initial Environmental Risk Assessment.
- Provide data for the design of any remedial works that may be required.
- Benchmark the contamination status of the site in this case potential ground gasses.

To achieve these objectives it is recommended that an investigation be undertaken comprising a minimum of six window sample boreholes which would be fitted with ground gas monitoring points. These may be situated outside the study site area within the continuation of a registered landfill which runs from the north site area onto level adjoining land under the same ownership.

This land currently borders a temporary car park. The study site and the temporary car park correspond to the mapped centre of the former landfill. The temporary car park would be easier to access by the window sampling rig. The points would subsequently be monitored for a minimum of six visits over a three month period.

8.3 Preliminary Summary

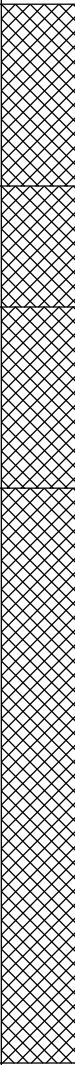
Table 8 below offers a preliminary summary of the ground conditions based solely on the information presented in this report. It is intended for guidance purposes only.

Table 13 Preliminary Summary

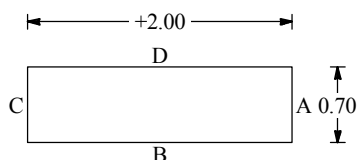
Description	Comments
Foundations	Strip footings should only be use for exceptionally light temporary structures and where preceded by suitable ground improvement. Pad and stem or mini piled foundations may prove viable in the extreme southeast of the site where soils believed to be natural were encountered at depths below 1.10m.
Compaction	It will be necessary to strip the site below the final subgrade level in order to separate each of the specific ground types prior to processing for a workable compaction materials. The laboratory results indicate a subgrade above CBR 5% is achievable with light compaction which many highway specifications may deem does not require capping. Compaction by heavy plant has been shown to provide CBR values above 20%.
Ground gasses	Ground workers are required to monitor ground gasses throughout excavations and the construction of drains which should be self-venting. In the event that the site were to subsequently have any buildings a ground gas risk assessment would be required as detailed above.
Soakaways	These would not be suited in proximity to a former landfill site.
Excavations	Following complete removal of the surface, concrete obstruction may be remain that require soft ground plant to be equipped with hydraulic breaking apparatus. At this time any significantly stained ground or asbestos should be quarantined within suitably impermeable containment and removed to a licenced facility by a suitably qualified contractor.
Mining and quarrying	The risk from shallow coal mining and quarry is not considered significant to the proposals.

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP32
Job No 16015	Date 16-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
1.70	ES1					(0.60) 0.60	Made Ground: Brown sandy gravelly CLAY with a high cobble and boulder content. Gravel is fine to coarse, angular to sub angular and consist of concrete and brick. Cobbles and boulders subangular, brick, concrete.		
						(0.40) 1.00	Made Ground: Light grey subangular GRAVEL of concrete and limestone.		
						(0.60) 1.60	Made Ground: Brick sets.		
						(1.90) 3.50	Made ground: Grey brown sandy gravelly COBBLES with organic odor. Gravel is fine to coarse angular to sub-angular and consist of brick, concrete.		

Shoring/Support: None
Stability: Trial pit collapsing below 3.00m



GENERAL REMARKS

Seepage 1.00m

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By
C Evans

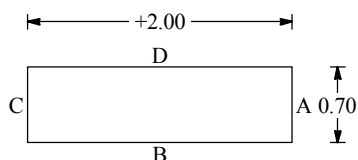
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP01
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.30	ES1					(0.35)	Made ground: Wet dark grey brown sandy GRAVEL with roots. Gravel is fine to coarse angular to sub-angular and consist of brick, concrete, sandstone, glass and plastic fragments.		
						0.35	Strata includes one number sub angular boulder concrete 800mm x 700mm x 200mm		
						(0.75)	Made Ground: Red brown gravelly SAND with high cobble content. Gravel is fine to coarse. Gravel and cobbles angular to sub-angular and consist of brick, concrete.		
						1.10	Circa: 0.7m concrete impenetrable and trial pit extended.		
1.20	ES2					(0.20)	Soft grey sandy gravelly CLAY. Gravel is fine to coarse sub angular to sub-rounded and consists of siltstone, limestone, sandstone, mudstone. Stratum has slight organic odor.		
1.50	B3					1.30	Stiff friable red brown sandy gravelly CLAY. Gravel is fine to coarse sub angular to sub-rounded and consists of siltstone, sandstone.		
						(2.10)			
						3.40			

Shoring/Support: None
Stability: Good



GENERAL REMARKS

Trial pit dry.

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By
C Evans

DYNAMIC PROBE LOG

Project Jaguar Landrover, Halewood				PROBE No DP01
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

Depth (m)	Readings (blows/100mm)	Diagram (N100 Values)						Torque (Nm)	Remarks
		5	10	15	20	25	30		
0	0								
1	0 2 7								
	10 12 10 10 9								
	4 8 7 2 1								
2	1 1 2 2 2								
	1 2 2 3 3								
3	3 3 3 3 3								
4									
5									
6									
7									

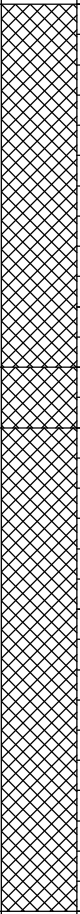
Hammer Wt (kg)	63.5		GENERAL REMARKS
Hammer Drop (mm)	0.75		
Cone Dia (mm)			
Cone Type	DPSH		
Damper	No		

All dimensions in metres Scale 1:50	Client Waldeck	Method/ Plant Used Competitor 130	Logged By C Evans
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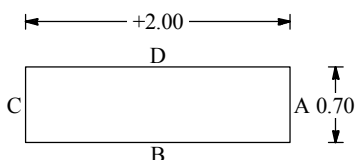
AGS3 DYNAMIC PROBE 16015 JAGUAR LANDROVER.GPJ GINT STD AGS 3.1.GDT 7/4/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP11
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
1.10	ES1					(1.20) <			

Shoring/Support: None
Stability: Good



GENERAL REMARKS

Slight seepage 3.00m

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

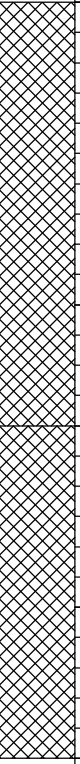
JCB 3CX

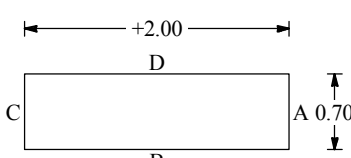
Logged By
C Evans

TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP12
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.30	ES1					(1.40)	Made ground: Brown sandy GRAVEL and COBBLES. Gravel is fine to coarse angular to sub-angular and consist of brick, concrete. Circa: 0.50m Hard concrete and brick sets penetrated to 1.40m by extending trial pit. (POSSIBLE FOOTING).		
						1.40			
						(1.10)	Made Ground: Grey slightly clayey, sandy GRAVEL with a high cobble and boulder content. Gravel is fine to coarse angular to sub-angular brick concrete, timber . Cobbles and boulders sub angular brick and concrete. Strata has increasing clay with dept.		
						2.50			

Shoring/Support: None Stability: Good		GENERAL REMARKS
		Trial pit dry.

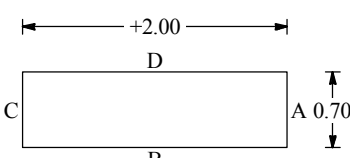
All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP13	
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		
1.00	ES1					(1.20)		
1.50	B2					(2.30)		
						3.50		

Shoring/Support: None Stability: Spalling to 1.20m 		GENERAL REMARKS Strong seepage 1.00m (sampled)	
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All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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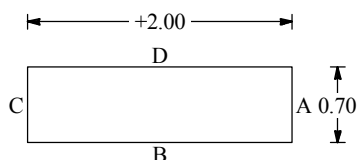
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP14
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

[illegible]

Shoring/Support: None
Stability: Hole saturated and collapsed at 1.00m

GENERAL
REMARKS

Strong seepage 1.00m (not sampled)

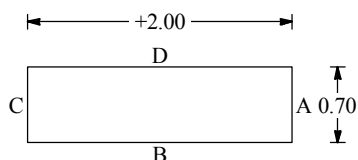
All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP15
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
1.00	ES1					0.10	Made Ground: Brown sandy gravelly CLAY.		
						(0.20) 0.30	MADE Ground: Grey dominantly medium sub-angular concrete and limestone GRAVEL		
						(0.50) 0.80	Made Ground: Grey brown sandy fine to coarse, sub angular GRAVEL of brick tar fragments and concrete.		
						(1.70) <			

Shoring/Support: None
Stability: Hole unstable at 2.50m



GENERAL REMARKS

Strong seepage 1.20m
(not sampled)

All dimensions in metres
Scale 1:25

Client **Waldeck**

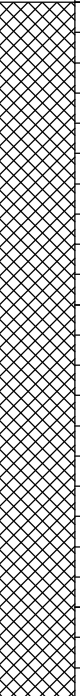
Method/
Plant Used

JCB 3CX

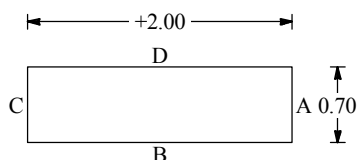
Logged By
C Evans

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP16
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.80	ES1						Made Ground: Red brown mottle black very sandy very gravelly CLAY with high cobble content and oil staining. Gravel is fine to coarse, angular to sub-angular and consists of brick, concrete . Cobbles sub angular brick and concrete. Circa 0.10m to .30m Dense Circa 2.30m strata too dense to penetrate.		
1.70	ES1					(2.30)			
						2.30			

Shoring/Support: None
Stability: Slight spalling throuout



GENERAL REMARKS

Slight seepage 1.70m

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By
C Evans

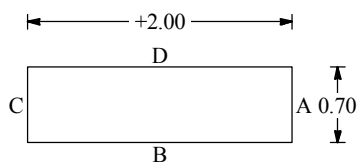
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP17
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

[illegible]

Shoring/Support: None
Stability: Good

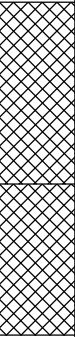
GENERAL
REMARKS

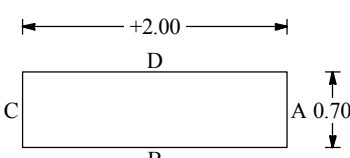
Trial pit dry.

All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP18	
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.70	ES1					(0.60)	Made Ground: Brown very sandy GRAVEL of fine to coarse sub angular concrete and brick.		
						0.60			
						(0.50)	Made ground: Dark grey ash timber and glass with metal fragments. Circa 1.10m Strata not penetrated possible footing.		
						1.10			

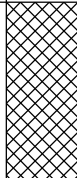
Shoring/Support: None Stability: Good 							GENERAL REMARKS	
							Trial pit dry.	

All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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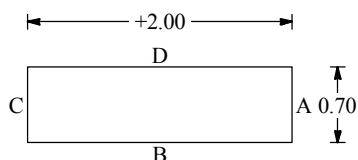
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP19
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.80 0.90	ES1 B2					(0.60) 0.60	Made Ground: Dark brown sandy gravelly CLAY with high cobble content. Gravel is fine to coarse, angular to sub-angular and consists of brick, concrete . Cobbles sub angular brick and concrete.		
						(1.40) 2.00	Made Ground: Red brown sandy gravelly CLAY with high cobble content. Gravel is fine to coarse, angular to sub-angular and consists of brick and concrete . Cobbles sub angular brick and concrete. Circa 2.00m Strata too dense to penetrate.		

Shoring/Support: None
Stability: Heavy spalling to 1.50m

GENERAL
REMARKS

Slight seepage 1.50m. JCB sinking on soft ground.

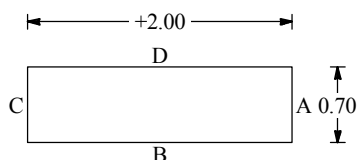
All dimensions in metres Scale 1:25	Client Waldeck	Method/ Plant Used JCB 3CX	Logged By C Evans
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TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP21	
Job No 16015	Date 15-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.30	ES1					(1.40)	Made Ground: Brown gravelly SAND. Sand is ash based. Gravel fine to coarse sub-angular brick /wire. West side of trial pit comprises coarse angular limestone gravel as for land drain located south of the trial pit location. 1.40m Trial pit collapsing back.		
						1.40			

Shoring/Support: None
Stability: 1.40m pit collapsing back.



GENERAL REMARKS

Trial pit dry.

All dimensions in metres
Scale 1:25

Client **Waldeck**

Method/
Plant Used

JCB 3CX

Logged By
C Evans

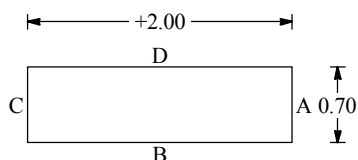
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP22	
Job No 16015	Date 16-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
1.60	ES1					(0.40)	Made Ground: Brown slightly clayey GRAVEL with roots.		
						0.40			
						(1.10)	Made Ground: Brown sandy gravelly cobbles and boulders. Gravel is fine to coarse, angular to sub angular and consist of concrete, brick, timber, slate, breeze block fragments.		
						1.50			
						(1.30)	Made Ground: Brown slightly clayey, very sandy gravelly COBBLES and BOULDERS of subangular brick and concrete. Gravel is fine to coarse, angular to sub angular and consist of concrete, brick, timber, slate, breeze block fragments.		
						2.80			

Shoring/Support: None
Stability: Trial pit continually collapsed back 2.80m



GENERAL REMARKS

Strong seepage 0.90m
(not sampled)

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

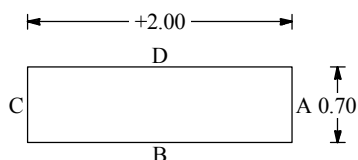
Logged By
C Evans

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP24	
Job No 16015	Date 16-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.30	ES1					(0.70) 0.70	Made Ground: Brown sandy gravelly CLAY with a high cobble and boulder content. Gravel is fine to coarse, angular to sub angular and consist of concrete, brick, timber and quartzite. Cobbles and boulders subangular, brick, concrete. Circa 0.30 Strata included possible asbestos sheeting.		
						(0.40) 1.10	Made Ground: Dense orange brown layer of bricks, concrete and sandstone, COBBLES and BOULDERS.		
1.10	ES2					(2.40) 			

Shoring/Support: None
Stability: Hole unstable and collapsing back below 3.50m



GENERAL REMARKS

Strong seepage 1.10m slightly oily
(sampled)

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By
C Evans

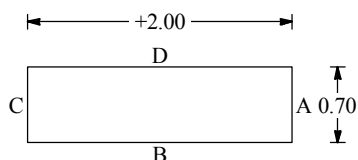
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP25
Job No 16015	Date 16-03-16	Ground Level (m)	Co-Ordinates ()	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		
0.90	B1							
1.50	ES2					(3.50)		
						3.50		

Shoring/Support: None
Stability: Slight spalling throughout



GENERAL REMARKS

Slight seepage 2.40m

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By

C Evans

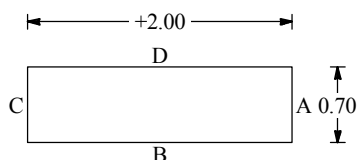
TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

TRIAL PIT LOG

Project Jaguar Landrover, Halewood				TRIAL PIT No TP27	
Job No 16015	Date 16-03-16	Ground Level (m)	Co-Ordinates ()		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
1.20	ES1					(3.00)	Made Ground: Brown sandy very gravelly CLAY with a high cobble and boulder content. Gravel is fine to coarse, angular to sub angular and consist of concrete, brick, wire, metal fragments, timber, plastic and land drain fragments. Cobbles and boulders subangular, brick and concrete. Strata includes roots to 0.60m. Below Circa 0.60m Strata becomes dark brown.		
						3.00			

Shoring/Support: None
Stability: Good



GENERAL REMARKS

Trial pit dry.

All dimensions in metres
Scale 1:25

Client Waldeck

Method/
Plant Used

JCB 3CX

Logged By
C Evans

TP LOG 16015 JAGUAR LANDROVER GPJ GINT STD AGS 3.1.GDT 22/3/16

Appendix D

Remediation Strategy, Landscape Bunds, Trailer Park, Eastland, Arcadis Consultants, March 2017

REMEDIATION STRATEGY

Landscape Bunds, Trailer Park Eastlands

3443710033_02

MARCH 2017

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Remediation Strategy

3443710033

Author	Sarah Grainger
Checker	Jonny Aykroyd
Approver	Christopher Ward
Report No	3443710033_02
Date	MARCH 2017

VERSION CONTROL

Version	Date	Author	Changes
DRAFT	February 2017	Sarah Grainger	First Issue - Trailer Park Bunds
ISSUE FOR PLANNING	3 rd March 2017	Sarah Grainger	Incorporating revised drawing from Waldeck.

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APPENDIX A

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UK Legislation & Regulatory Guidance

1 Introduction

1.1 Appointment

Arcadis (UK) Limited (Arcadis) was previously commissioned by Jaguar Land Rover to prepare a Remediation Strategy in support of the proposed development to create a new permanent trailer parking facility, located in the Eastlands area of Jaguar Land Rover Halewood. This report has been updated to account for a change in design to include landscape bunds.

The subject site is located off East Road, Jaguar Land Rover, Speke Boulevard, Halewood, Liverpool, L24 9BJ. A Site Location and Layout Plan is presented in Appendix A.

1.2 Proposed Development & Planning Status

The proposed development comprises two landscaping bunds to the east and south of the approved Trailer Park Eastlands (granted planning permission under reference: 16/00316/FUL) and associated works.

The proposals have arisen as a result of the on-going works to deliver the wider development strategy at Jaguar Land Rover Halewood. This application aims to improve the visual appearance and security around the approved Trailer Park but also responds to the identification of asbestos during construction of the Trailer Park.

During the construction of the Trailer Park works had to cease due to the identification of larger than expected quantities of asbestos found within the ground. The asbestos identified on the Trailer Park site needs to be managed in a safe and controlled way, with the contaminated soil to be capped to prevent any future risk.

Furthermore, as a result of the construction works associated with the delivery of the North Road Car Park (granted planning permission under reference 16/00148/FUL) a large amount of non-contaminated Topsoil is available to be used to construct the bunds.

In addition to its objectives of improving the visual appearance and security for the Trailer Park, Jaguar Land Rover is aware of the need to find ways to manage the movement of excess soil in the most environmentally efficient way possible. Transporting the excess materials off site to a suitable location for disposal, would increase the impact on the overall environmental footprint, increase costs and create logistic complications surrounding the movement of contaminated soil.

Therefore, in response to these issues Jaguar Land Rover is proposing to build two landscape bunds to the east and south of the approved Trailer Park. Asbestos impacted soils will be reused in the core of the eastern bund only with a protective membrane. Excess soil from the North Road Car Park will be used to construct the southern bund and create the cap on the eastern bund.

Arcadis undertook pre-application discussion with Ian Gaskell (Knowsley Council) and Ben Scott (Environment Agency) to agree the scheme design and methodology. This document aims to provide a documented account of the proposed scheme

The proposed development layout is shown overleaf:



Image 1-1 Indicative redline boundary and layout of proposed Eastlands Trailer Park Bunds (Not to scale)

1.3 Existing Site Investigation Information

Arcadis have completed a Phase 1 Geo-Environmental Assessment for the Eastlands Site which includes the area the bunds are proposed; the full reference for which is as follows:

- Phase 1 Geo-Environmental Assessment, Proposed Trailer Park, Eastlands, Arcadis reference: 3443710019; dated May 2016.

The Phase 1 was submitted with the Planning Application in support of the proposed Trailer Park development (Planning Reference 16/00316/FUL).

In addition to the Phase 1, Waldeck Consulting Limited commissioned Silkstone Environmental Limited (SEL) to carry out a *Phase 2* site investigation at the Eastlands Site on behalf of Jaguar Land Rover; the full report reference of which is as follows:

- Site Investigation Report (East Site), Jaguar Land Rover, Halewood. SEL report reference: 16015; dated April 2016.

The Phase 2 intrusive investigation comprised the excavation of 32 trial pits to a maximum depth of 4.0m below ground level (bgl) (TP05) and four dynamic probe locations to a maximum depth of 4.0m bgl (DP03 and DP04).

- Santia Laboratory Report, October 2016, ref AP001205-03-04

Following the identification of asbestos impacted soils and Asbestos Containing Materials (ACMs) Santia Asbestos Management Ltd attended site to remove a small number of ACMs from site. A walkover survey in conjunction with partial soil excavation was undertaken by Santia Asbestos Management Ltd on the 10th October 2016. This identified further suspected ACMs, with analysis confirming the presence of asbestos.

- ALcontrol Laboratory Report, October 2016, ref 161015-83

Samples were taken from the topsoil and Made Ground stockpiles from the North Road Car Park Development (planning reference 16/00148/FUL). Analysis was undertaken by ALcontrol, a UKAS accredited laboratory and tested for the following contaminants: arsenic, cadmium, chromium (total and VI), lead, mercury, selenium, copper, nickel, zinc, speciated polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (banded TPH), organic matter, asbestos and pH.

The work was conducted in general accordance with and reference to the UK legislation and regulatory guidance for the investigation of contaminated land, a summary of which is presented in Appendix B.

This Remediation Strategy should be read in conjunction with the preceding reports.

1.4 Objectives

The objective of this report is to outline the remediation works proposed, demonstrating appropriateness for the proposed end use.

1.5 Scope of Works

The scope of works included:

- Review of data collected during previous phases of works;
- Outline the rationale for management of soil arisings and other construction/demolition waste including asbestos management with respect to reuse & bunds;
- Assessment of potentially active pollutant linkages;
- Identification of mitigation/ remediation measures applicable to any identified pollutant linkages;
- Outline the procedure for management of unexpected contamination, should this be identified during construction/demolition works.

1.6 Assumptions and Limitations

This report is only valid when used in its entirety and with reference to preceding technical reports. Any information or advice included in the report should not be relied upon until considered in the context of the whole report and previous work. Reference should be made to the notes on Study Limitations presented in Section 6.

1.7 User Reliance

There are neither third party rights nor benefits conferred under this report. Use of this report is strictly limited to Jaguar Land Rover and its direct and indirect subsidiaries, which are the sole parties to whom Arcadis intends to confer any rights. Any reliance on the contents of this report by any other party is the sole responsibility of that party.

2 Site Setting

2.1 Proposed Development Scenario

The scheme entails the construction of two bunds to the south and east of the approved Trailer Park (Planning Reference 16/00316/FUL) to improve visual appearance and security. The scheme design is shown in drawing 1617-0077-WDK-SI-C-VI-SI in Appendix A of this report. The bunds are to be located on an area of mixed scrub land within an adopted industrial site, historically subject to fill activities.

During the construction of the Trailer Park, works ceased due to the identification of larger than expected quantities of asbestos found within the ground. To manage the asbestos in a safe and controlled way, it is proposed to reuse the impacted soils within the core of the new bunds under a suitably designed cap of geotextile and uncontaminated cover soil. A source of uncontaminated soil is available on site from construction works associated with the delivery of the North Road Car Park (granted planning permission under reference 16/00148/FUL).

In addition to its objectives of improving the visual appearance and security for the Trailer Park, Jaguar Land Rover is aware of the need to find ways to manage the movement of contaminated and uncontaminated soil in the most environmentally efficient way possible. This is proposed by capping the asbestos in the eastern bund with a protective membrane, and re-using the excess soil from the North Road Car Park as a clean capping layer. The uncontaminated North Car Park soils will be used to construct the entire southern bund.

Arcadis undertook pre-application discussion with Ian Gaskell (Knowsley Council) and Ben Scott (Environment Agency) to agree the scheme design and methodology.

2.2 Ground Contamination

2.2.1 Non-Asbestos contamination

There are two sources of soils to be used in the construction of the bunds. These are outlined and discussed below:

1. The source soils to be used for the core of the east bund would be derived from the previously consented Trailer Park development. The soils have been subjected to an initial screening risk assessment by SEL using the Atkins Atrisk-soils™ system (to which SEL are subscribers); full details of which are provided within their report.

The Atkins Site Specific Values (SSV) that were used by SEL were for “Open Space Land Use” with 1% Soil Organic Matter and a sand soil type” for “Residential with the consumption of home grown produce”. This is considered to be an overly conservative assessment given the Site is to be developed into a HGV trailer park (predominantly hardstanding commercial open space with an amenity/ security building and only limited landscaping). Consequently, the laboratory chemical results for the site soils have been compared to Arcadis Generic Assessment Criteria (GAC) protective of human health based on commercial land-use as part of the derivation of a Materials Management Plan.

There were no measured concentrations of Contaminants of Concern (CoC) found in excess of the GAC and as a result the risk to future users of the development is considered to be negligible.

A lead concentration of 931mg/kg was detected in a sample of Made Ground analysed from Trial Pit TP04 (0.8m bgl). Whilst elevated relative to other samples this concentration is not considered to pose a significant impact on the development for the following reasons:

- TP04 is located in the south of the proposed trailer park where this area will be covered with hardstanding and therefore there will be no active pollutant linkages associated with lead in the developed scenario, as the hardstanding will provide a permanent barrier between site users and the Made Ground soils;
- The proposed area of planting (shrubs/ trees) to the south of the subject development is also not likely to be significantly affected by the lead concentrations encountered; and
- The concentration of 931mg/kg is significantly below our Generic Assessment Criterion of 2,330mg/kg which is applicable to a Generic Commercial Land-use Scenario with some open

areas, uncovered by hardstanding and based on the Category 4 Screening Level (C4SL) approach.

The site soils are therefore considered chemically suitable for use under the proposed development scenario.

2. The source soils for the southern bund and for the clean cap on the eastern bund, are derived from the previously consented North Road Car Park scheme. These soils are Topsoil, Made Ground and natural materials.

Twenty-four samples have been taken from the source area materials. None of the samples tested positive for asbestos and all other analytes were determined to be comparatively low in concentration and comfortably far below the GAC reuse criteria proposed.

The site soils are therefore considered chemically suitable for use under the proposed development scenario.

2.2.2 Asbestos contamination

None of the soil samples from the North Road Car Park scheme tested positive for asbestos. This section is specific to the Trailer Park sourced soils only.

Amosite, Crocidolite, Chrysotile asbestos has been identified in the Made Ground fill materials at the Trailer Park site. The asbestos has been identified in the form of free fibres (through laboratory analysis) and ACMs (pipe insulation debris, floor tiles, cement debris, rope and debris, flash guards, asbestos insulating board and debris).

This could potentially present an acute exposure risk to site/ construction workers and the public during the development window and in the long term should the exposed shallow soil become sufficiently dry and disturbed that fibres become airborne. The management of the asbestos exposure risk is therefore detailed further in Section 3 to demonstrate that the proposed design and control measures will manage these risks appropriately.

2.2.3 Ground Gas

The SEL investigation did not specifically address ground gas hazards/ risks however the Made Ground materials encountered across the Eastlands area did not include significant degradable organic matter or putrescible waste and therefore the gas generation potential of the Made Ground is considered Low. However, due to the presence of a guard building, Arcadis undertook a Ground Gas Risk Assessment at the request of Knowsley Council in the Remediation Strategy for the approved Trailer Park. The monitoring dataset indicated that the site fell into Characteristic Situation 1 (CS1). CS1 confirms the anticipated Very Low gas risk and on this basis no gas protection measures are required to be incorporated into the proposed security/ amenity building.

Under the proposed development scenario of the bunds, no additional structures are proposed therefore no new receptors to a ground gas risk are being introduced. Ground gas is therefore not seen to contribute to a potential pollutant linkage.

3 Asbestos Management

3.1 Methodology

- Amosite, Crocidolite, Chrysotile asbestos has been identified in the Made Ground fill materials at the Trailer Park site. The asbestos has been identified in the form of free fibres (through laboratory analysis) and ACMs (pipe insulation debris, floor tiles, cement debris, rope and debris, flash guards, asbestos insulating board and debris).
- The works to excavate and reuse the impacted soils would be “licensable” under the Control of Asbestos Regulations 2012 therefore the HSE will be notified and all works with asbestos impacted soils will be undertaken by a licenced asbestos contractor (Beech Group).
- As required by the Regulations, a Plan of Work has been written which summarises all of the H&S control measures, monitoring and training that will be implemented to protect human health both during the works and in the long term.
- All site staff working in the licensable area will have site specific training on controlling hazards from asbestos impacted materials.
- Following industry best practice (CIRIA C733), the soils will be visually screened by qualified and competent operatives such that discernible ACM would be handpicked from the excavated soils by the contractor for “betterment”. The handpicked ACM will be removed from site as hazardous waste under full Duty of Care.
- The picked soils will be used to form the core of the security bund to the east of the Trailer Park development. Due to the high clay content of soils in this area, the soils are considered to be geotechnically suitable and it is not anticipated that the soils would need to be stabilised.
- A marker membrane will be placed on top of the impacted soils to create a visually discernible layer and to prevent burrowing animals and bioturbation. Should it be required, a grid terram would be used to support the cover layer of clean soils sourced from the North Road Car Park development.
- The reuse of the soils will be through a Materials Management Plan (Definition of Waste: Development Industry Code of Practice 2011), with all soils movement tracked and monitored. Works would be summarised in the associated Verification Report further details below in Section 3.2.
- The bund containing asbestos impacted soils will be grassed and sown with a wildflower mix. No shrubs, trees or deep rooted vegetation will be planted.
- The bund where asbestos impacted soils have been reused would be placed on the Jaguar Land Rover Site Asbestos Register and surveyed regularly to monitor their condition. Any deterioration in condition would be repaired.

3.2 Verification Report

To demonstrate that works have been undertaken appropriately under the Materials Management Plan a Verification Report will be compiled and a copy provided to the Local Authority and will be kept by Jaguar Land Rover for 2 years. The Report will include (but not necessarily be limited to):

- Appropriate site plans;
- Experience and qualifications of the person preparing the report in relation to the specific project;
- Description of the project;
- Photos of installation;
- Description of how the use of materials links with the Remediation Strategy;
- Reference to site investigation data;
- Reference to risk assessments (including qualitative risk assessments);

- Reference to the Materials Management Plan and associated tracking system, including alterations made and why;
- Suitable for use criteria;
- Statement confirming no treatment was undertaken;
- Laboratory analysis;
- Reference to waste transfer documentation, including return loads (this may not be applicable to the use of materials within the Site of Origin scenario);
- Record of contingency arrangement(s) that had to be implemented;
- Record of quantity of materials used; and
- Copies of signed Declarations by Qualified Person(s).

4 Summary of Pollutant Linkages

The Conceptual Site Model (CSM) identifies potential contaminants, receptors and exposure pathways that may be present based on the proposed development scenario and is a key step in the assessment of risk from land contamination as set out in the Environment Agency's CLR 11 publication "*Model Procedures for the Management of Land Contamination*".

It is considered that the unmitigated Low risk from heavy metals and hydrocarbons to construction workers will be mitigated/ managed by the Principal Contractor through their mandatory duties under the Health and Safety at Work legislation (e.g. Risk Assessment and Method Statements, mandatory PPE and full length clothing, control of dust, good hygiene prior to eating etc.). The residual risk following the implementation of these controls is determined to be Low to Negligible. Long term impact on site users and the public from heavy metals and hydrocarbons has been reviewed in Section 2.2.1, as the contamination does not exceed GACs, it has been determined that the soils do not require remediation with respect to these contaminants.

With regard to asbestos, the proposed development scenario and management controls have been outlined in Section 3. Following the verified implementation of these controls, the residual risk is determined to be low to moderate.

Ground gas is not considered to be a potential pollutant linkage as the proposed development scenario is for two earthen bunds which are open to the atmosphere. No new buildings are proposed in association with this application.

The pollutant linkages identified are summarised in the table below:

Source	Potential Contaminants of Concern	Pathway	Receptor	Risk without mitigation	Control Measures	Residual Risk
Historical Usage (land fill/raising)	Metals Hydrocarbons	Incidental Ingestion of soils and dust (during construction)	Construction Workers	Low	Scheme Design RAMS Hygiene PPE	Low – Negligible
Filled ponds and water features Localised spillages	Asbestos (loose fibres in soil – microscopic identification and ACM)	Inhalation	Construction Workers Public Trailer Park Users	Moderate - High	Scheme Design Licenced Contractor RAMS Hygiene RPE and PPE	Low - Moderate

Table 1.1 – Remaining Source Pathway Receptor Linkages

5 Unexpected Contamination Management Protocol

A Licenced Asbestos Contractor is managing the bund works and the discovery of further ACMs is anticipated. Due to the presence of fill materials and Made Ground an Unexpected Contamination Protocol has been proposed to provide a robust management procedure should non-asbestos contamination be identified.



6 Study Limitations

This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Arcadis (UK) Limited (Arcadis), with the reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with the Client. Arcadis does not accept responsibility for any matters outside the agreed scope.
2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing. The contents of this report may not be used or relied upon by any person other than this party without the express written consent and authorisation of Arcadis.
3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.
4. All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis have no obligation to advise the Client or any other party of such changes or their repercussions.
5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.
6. Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties. Arcadis has taken reasonable steps to ensure that the information sources used for this investigation provided accurate information, and has therefore assumed this to be the case.
7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.
8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.
9. The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.
10. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.
11. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have not been obtained.
12. Arcadis has relied upon the accuracy of documents, oral information and other material and information provided by the Client and others, and Arcadis assumes no liability for the accuracy of such data, although in the event of apparent conflicts in information, Arcadis would highlight this and seek to resolve.
13. Unless otherwise stated, the scope of works has not included an environmental compliance review, health and safety compliance review, hazardous building materials assessment, Interviews or contacting Local Authority, requests for information to the petroleum officer, sampling or analyses of soil, ground water, surface water, air or hazardous building materials or a chain of title review.

Appendix E

Materials Management Plan, Halewood, Arcadis Consultants, June 2017

MATERIALS MANAGEMENT PLAN HALEWOOD

JAGUAR LANDROVER

34437107_01_01

JUNE 2017

DRAFT



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Written

Sarah Grainger

Senior Consultant – Qualified Person (QP – 308)

Checked

Approved

VERSION CONTROL

Version	Issue Date	Revision Summary
01	June 2017	

Note - revisions to the MMP do not trigger an additional Declaration by a Qualified Person, unless an additional site is added to the project.

Revisions to the MMP must be recorded and summarised in the Document Control box above.

Project number: 34437107_01_01
June 2017

Document printed only in PDF format

Client: Jaguar Land Rover

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1. Site Layout Plan
2. Indicative Design Drawings for Reuse
- 3 Plan Detailing Stockpile Locations

Appendix

- A Environment Agency/Local Authority Correspondence
- B Design Statement Including Suitability For Reuse Criteria
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- D Laboratory Data
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1 INTRODUCTION

Jaguar Land Rover are undertaking development works at their site located at Speke Boulevard, Halewood. As a result there are projects generating a supply excavated ground materials and additional works with a demand for excavated materials.

Briefly, excavated materials will arise from:

- Site A – North Road Car Parks - The creation of new areas of ground level car parking to the north of the site; and
- Site B – Trailer Park - The creation of a new trailer park to the west of the Halewood site.

This is proposed to be reused within the ongoing works at the JLR Halewood site:

- Creation of security bunds to the Trailer Park.

This document is the Materials Management Plan (MMP) prepared for that reuse arrangement. A “Reuse of Site of Origin” scenario is proposed as outlined in the CL:AIRE document, Definition of Waste: Development Industry Code of Practice (version 2). Preliminary discussions were held between Arcadis (UK) Ltd, the Environment Agency and Local Authority, to agree the proposed reuse strategy, see Appendix A.

Site Investigation and additional stockpile sampling at Site A (North Road Car Park) has indicated that there is no significant contamination present in the soils to be reused. Site Investigation and on site excavation has indicated that the soils at the Trailer Park are contaminated with asbestos. The MMP will therefore be progressed through Route A – where there is contamination of the ground.

This Materials Management Plan (MMP) has been structured and completed using the MMP template in the Code of Practice. Where sections are not applicable these sections have been greyed out and annotated accordingly. As outlined in the Code of Practice, the MMP is a live document, updated as the project progresses and therefore subject to revision.

2 CL:AIRE MATERIALS MANAGEMENT PLAN (MMP) FORM

1. Specify the scenario to which this MMP relates, as described in the CoP (1, 2, 3, 4):

1. Reuse on the Site of Origin

~~2. Direct Transfer of clean naturally occurring soil and mineral materials~~

~~3. Cluster Project~~

~~4. Combination of any of the above~~

Excavated materials comprising top soil, made ground and sub soils will be excavated from two source areas, stockpiled and reused within the reuse areas. The source, stockpile and reuse areas are outlined on Figure 1.

The project MMP follows Route A, see Appendix B for Remediation Strategy. Details of all activities will be included in the final Verification Report.

2. Organisation and name of person preparing this MMP (full address and contact details):

Sarah Grainger
Arcadis (UK) Ltd
10th Floor
3 Piccadilly Place
Manchester
M1 3BN

2.1 Site Details

3. Site / Project name(s):

Jaguar Land Rover, Speke Boulevard, Halewood

2.2 Landowners

4. Name of Landowner(s) (full address and contact details) – Where excavated materials are arising from and reused:

Jaguar Land Rover,
Speke Boulevard,
Halewood
L24 9BJ

See Figure 1: Site Layout Plan

2.3 Summary and Objectives

5a. Provide a brief description of the planned project and how excavated materials are to be reused within it.

There are two source areas where materials will be excavated to be reused on the project:

Source Site A - North Road Car Park

New areas of car parking are to be created on a rectangular plot at the north of the site between the railway and perimeter road. The plot is referred to as the North Road Car Park and subdivided into sub plots using existing electricity pylons as markers. These sub plots are named from west to east as:

- A
- B
- C1
- C2 and
- D

To facilitate the development, the ground level will be reduced to allow access from the perimeter road to the new parking bays, with the ground level sloped toward the perimeter road to promote drainage. This land is not believed to have been previously subject to significant development aside from some raised ground toward the eastern tip of plot D where there is an embankment. The ground level of the perimeter road increases in elevation from west to east, such that the road level adjacent to plot D is higher than plot A. Due to this incline in ground level on the plot, the depth of dig increases from a surface scrape at the west (plot A) to several metres to the east (plot D).

Excavated material from this plot will comprise top soil, made ground and sub soils (Till). Approximately 7,095m³ of sub soil and made ground are anticipated to arise. An additional 920m³ of vegetation will be removed from the site as waste for recycling off site at a licensed facility. This vegetation waste material will not form part of the MMP.

A site investigation has been completed by Silkstone Environmental Ltd in May 2016 and the material has been subject to further sampling from excavated stockpiles. This determined that the materials to be excavated presented a low risk to human health and the environment.

Excavated materials are to be removed from the North Road Car Parks area and stockpiled adjacent to the Trailer Park for reuse in the reuse sites (see Figure 1).

Source Site B - Trailer Park

A new Trailer Park is to be constructed to the east of the Halewood site on an area of mixed scrub land within an adopted industrial site, historically subject to fill activities. Site Investigation and on site excavation has identified the presence of Asbestos Containing Materials (ACMs) within the made ground.

Soils impacted with asbestos will be chicken picked by a licenced contractor under compliance with the Control of Asbestos Regulations 2012, to remove the fragments/artefacts of ACM. The ACM will be sent for off site disposal at an appropriately licenced site. The remaining soils will be used to form the core of the new eastern bund around the Trailer Park (Site 3). Approximately 1,585m³ of impacted excavated materials. The reused materials will be covered with a geotextile and a clean capping layer installed (from North Road Car Park). This is detailed more fully in the Remediation Strategy in Appendix B.

Any excess impacted soil will be sent off site to an appropriately licenced facility.

Reuse Sites

No treatment of the excavated materials is proposed except for the removal of any significant debris e.g. tree roots from the top soil, licenced removal of asbestos fragments. This does not require an Environmental Permit. The excavated material is proposed to be reused within the JLR Halewood scheme for the following use:

- Creation of a security bund to the south of the new Trailer Park from uncontaminated excavated material from North Road Car Park.
- Creation of security bund to the east of the Trailer Park from ACM contaminated material from Trailer Park and the installation of clean capping soils from North Road Car Parks.
- Capping existing security bund at Eastlands Car Park which has been found to contain ACM with clean soils from North Road Car Parks

Approximately 7,095m³ of uncontaminated sub soils or made ground will be used to create the bund core (to south bund) and top soils to dress the surface to facilitate revegetation (all bunds). Approximately 1,585m³ of contaminated excavated ground will be used to form the core of the eastern bund. The bund to the Eastlands CarPark already exists and soils are being used to cap it only.

Material that is reused on site will be subject to the submittal of a Declaration (one per source area) and managed as a recovered non waste material. All materials reused will be tracked and stock piled with all analytical information and records collated in a Verification Report.

Any excavated materials found to be in excess of that required, or out of scope with the MMP, will be sent off site for disposal and subject to Waste Legislation. This will be managed with regard to Duty of Care and the records collated in the Verification Report.

2.4 General Plans and Schematics

6. Attach a location plan for the site(s) and a plan of the site(s) which identifies where different materials are to be excavated from, stockpile locations (if applicable), where materials are to be treated (if applicable) and where materials are to be reused.

Plan References:

- Figure 1: Site Layout Plan – showing source areas of excavated materials, stockpile locations and proposed areas of reuse
- Figure 2: Bund Design Layout and Cross Section

7. Attach a schematic of proposed materials movement. Where there is only one source area and one placement area briefly describe it below. For all other projects a schematic is required.

Schematic Reference: Figure 1

The first source area of excavated material are the North Road Car Park development to the north of the site. Topsoil, subsoil, made ground and virgin clay will be excavated from areas A, B, C1, C2 and D and reused at the southern security bund and the surface cap of the eastern bund around the new Trailer Park and surface cap to the existing bund at Eastlands Car Park.

The other source area is the Trailer Park and the contaminated soils will be used in the core of the eastern bund only and capped with an appropriately engineered cap.

The bund at the Eastlands Car Park is already in existence from a previous planning permission.

2.5 Parties Involved and Consultation

If more than one party please provide additional details for them and identify the location that they will be working (e.g. where a site is zoned).

8a. Main earthworks contractor(s) (full address and contact details) – Where excavated materials are arising from.	
Source Site A - North Road Car Park Excavation and Stockpiling	Source Site B - Trailer Park Excavation and remediation
McDermotts Catherine Street Aston Birmingham B6 5RS	John Beech Limited Dock Road North Bromborough WIRRAL Merseyside CH624TQ
8b. Main earthworks contractor(s) (full address and contact details) - Where materials are to be reused:	
Reuse	
John Beech Limited Dock Road North Bromborough WIRRAL Merseyside CH624TQ	

9. Treatment contractor(s) (full address and contact details) – for treatment on site of origin, or at a Hub site within a Cluster Project

N/A – not a hub/cluster arrangement

10. Where wastes and materials are to be transported between sites provide details of the transport contractor(s) (full address, contact details and waste carriers registration details (if applicable)):

Materials will be excavated and reused with the JLR Halewood site.

Wastes will not be transported between sites as this is a Reuse on Site of Origin Scenario. Excess or non conforming materials will be transported off site and will be managed as waste under full Duty of Care – see section 22 of this MMP for more detail.

11. For each site where materials are excavated and where materials are to be reused provide Local Authority contact details (full address and named contacts):

Ian Gaskell
Senior Officer - Environmental Health
Environmental Health and Consumer Protection Service
Knowsley Council
Yorkon Buildings
Archway Road
Huyton
L36 9FB

12a. For each site where materials are to be reused and for Hub Site locations provide Environment Agency contact details (full address and named contacts):

Ben Scott
Team Leader
Environment Agency
Richard Fairclough House
Knutsford Road
Latchford
Warrington
Cheshire
WA4 1HT

12b. Attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection to the proposals (see 3.37 of CoP)

EA references: See Appendix A of this MMP for the agreement of the reuse proposed

If the EA has not been consulted please explain why (see paragraph 3.39 of the CoP).

N/A – consulted

2.6 Lines of Evidence

There is no one single factor that can be used to decide that a substance or object is waste, or when it is waste at what point it ceases to be waste. As complete picture as possible has to be created. The following sections require completion to ensure the correct decision is made.

If a requested item is not relevant it is important for you to clearly state why this is so (e.g. no planning permission required because permitted development status exists).

2.6.1 Suitability for Use Criteria

13. Please describe or provide copies of the required specification(s) for the materials to be reused on each site.

Reference: Appendix B and C and Figure 2 of this MMP

Appendix C - The desk study and intrusive site investigation completed on the North Road Car Park material (Silkstone Environmental Ltd May 2016) has indicated that the source material is not considered to be subject to significant contamination and classed the materials as presenting a low risk to human health and the environment. However asbestos contamination has been identified in the Trailer Park soils and therefore the reuse will follow route A (as defined in the Code of Practice) and a Remediation Strategy written. Suitability for reuse criteria are presented within the Remediation Strategy provided as Appendix B.

In line with the design indicated in Figure 2, materials to be reused on site will be governed by two requirements; geotechnical suitability and appropriate chemical composition.

Geotechnical requirements:

Materials are to be reused as fill at sites 1 and 2 and to construct a bund at site 3, all without treatment. It is understood the Contractor or Project Engineers have not issued a specific geotechnical specification for materials to be reused other than that outlined below:

- As the car parking areas and crane pad (sites 1 and 2) will be load bearing; only the uncontaminated sub soils and made ground will be reused for engineered fill in these areas.
- Similarly the core of the security bunds will be constructed using the made ground and sub soils. The core will be benched to ensure that the cover soils are retained, this design has been undertaken by the Project Engineers (Waldeck)
- The top soil will only be used to facilitate landscaping and visual amenity at all three sites, with significant debris e.g. tree roots, removed prior to placement.

Contamination requirements

The superficial deposits beneath the all 3 reuse sites where the material is to be used is Devensian Till which is classified as a Secondary Undifferentiated Aquifer which means the deposits have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. The Site Investigation has shown that these deposits have been proved to at least a depth of 10m bgl in places. The site is to remain in the ownership of JLR for a Commercial/Industrial use and therefore the following specification is proposed:

- The suitability for reuse criteria are based on Generic Assessment Criteria (GAC) for protection of human health and the environment. Materials reused will be assessed against commercial end use GACs.
- Excavated materials will be tested at a frequency of approximately 1 sample per 1,000m³ on the topsoil, sub soil and made ground for the following analytes:
 - o Metals (As, Cd, Cr, Cr VI, Cu, Pb, Hg, Ni, Se & Zn)
 - o Polycyclic Aromatic Hydrocarbons (Speciated 16)
 - o Total Petroleum Hydrocarbons (TPH_CWG)
 - o Asbestos

o pH

- Visual and olfactory screening will be undertaken on any future material excavation and during material movements.
- A watching brief will be in place to identify material which is visually distinct from the other excavated material e.g. black or oily materials
- Asbestos Containing Materials (ACM) are anticipated to arise from the Trailer Park. These will be hand-picked prior to the soils being reused under the MMP.

ROUTE A - Where contamination is suspected or known to be present

14a. Please provide copies or relevant extracts from the risk assessment(s) that has been used to determine the specification for use on the site. This must relate to the place where materials are to be used.

This must be in terms of

- (i) human health
- (ii) controlled waters and
- (iii) any other relevant receptors.

If a risk assessment is not relevant for a particular receptor given the site setting please explain why below:

The Remediation Strategy is included with this MMP in Appendix B.

- i) Human Health has been assessed through the use of Human Health GACs. Excluding asbestos, none of the measured concentrations of the Contaminants of Concern (CoC) in the site investigation samples from the Eastlands and North Car Park areas were found in excess of the GACs and as a result the risk to future users of the development is considered to be negligible. The site soils are therefore considered chemically suitable for use under the proposed development scenario.

Risks to human health from asbestos in the soils from the Eastlands area will be managed through the measures identified in section 3 of the Remediation Strategy. The works to manage and reuse the asbestos impacted soils are being undertaken by a licenced asbestos contractor.

- ii) The bedrock geology is recorded as a Principal aquifer and there are surface water receptors in the vicinity. The asbestos contaminated soils are in situ at the Trailer Pak, asbestos is not considered to be a contaminant to these controlled water receptors. The materials excavated from the North Road Car Park and are proposed to be reused do not exceed the Generic Assessment Criteria derived.
- iii) The Local Nature Reserve is considered to be a sufficient distance away to not be a receptor. The design of the bunds includes an agreed offset from the Local Nature Reserve which has been agreed with Knowsley Council.

14b. Please attach any relevant documentation from the LA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)

LA references: See Appendix A

If the LA has not been consulted please explain why (see paragraph 3.39 of the CoP).

N/A - Consulted

14c. Please attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 and Table 2 of the CoP)

EA references: See Appendix A

If the EA has not been consulted please explain why (see paragraph 3.39 of the CoP).

N/A - consulted

14d. Please attach any relevant documentation from any other regulators (if relevant) relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)

N/A

ROUTE B - Where contamination is not suspected

ROUTE A IS BEING FOLLOWED

15a. Please attach copies or relevant extracts from the Desk Top Study that demonstrates that there is no suspicion of contamination.

15b. Please attach copies or relevant extracts from the site investigation/testing reports that adequately characterise the clean materials to be used (if appropriate).

15c. Please attach copies of any other relevant information (if available) confirming that land contamination is not an issue.

N/A

2.6.2 Certainty of Use

Various lines of evidence need to be provided to demonstrate that the materials are certain to be used. This includes:

- The production of this MMP
- An appropriate planning permission (or conditions that link with the reuse of the said materials)
- An agreed Remediation Strategy(ies)
- An agreed Design Statement(s)
- Details of the contractual arrangements

Please identify in the following sections what lines of evidence relate to the site(s) **where the materials are to be used.**

16a. Planning Permission(s) relating to the site where materials are to be reused

Please provide a copy of the relevant planning permission

Reference: An application for planning has been submitted on **SECTION CAN ONLY BE COMPLETED ONCE PLANNING CONSENT GRANTED**

16b. Explain how the reuse of the excavated materials fits within the planning permission(s) for each site.

SECTION CAN ONLY BE COMPLETED ONCE PLANNING CONSENT GRANTED

16c. If planning permission is not required for any one site please explain why below e.g. permitted development, clean-up of a chemical spill, surrender of an Environmental Permit, re-contouring within the existing permission:

Planning consent previously obtained for Eastlands Car Park bund for temporary use. The capping of this bund is for the short term management of health and safety risk from asbestos. The cap is not considered to make the bund permanent.

Where contamination is suspected or is known to be present

17. Please provide a copy of any Remediation Strategy(ies) that have been agreed with relevant regulators.

Reference: N/A – Appendix B

Where contamination is not suspected

18. Please provide a copy of any Design Statement(s) that have been agreed (e.g. with the planning authority or in the case of permitted developments the client):

Reference:

2.6.3 Quantity of Use

19. Please provide a breakdown of the excavated materials for each site and how much will be placed at each site or sub area of each site.

Where this is not specific to a single readily identifiable source refer to an annotated plan, schematic or attach a tabulated summary.

See overleaf

	SOURCE NORTH CAR PARKS (m ³)	SOURCE TRAILER PARK (m ³)	REUSE (m ³)
Uncontaminated Made Ground	3,095	-	7095
Naturally occurring sub soils ***	4,000		
Contaminated Made Ground/Soils		1,585	1,585
TOTAL	7,095	1,585	8,680

See Figure 1 for location of source and reuse sites.

The naturally occurring sub soils are included for completeness in the context of the cut and fill calculations. They are not included in the reuse volume which is chargeable under the Code of Practice. The Declaration Fee has been calculated based on a reuse volume of 3,095m³ from north car parks and 1,585m³ from trailer park (4,680m³) plus CL:AIRE admin fee (£40). As the volume is <5,000m³ there is no fee for that element so total fee is £40.

20a. How has consolidation/compaction being considered in the above mass balance calculations?
Bulking factor of 10% has been applied.
20b. How has loss due to treatment being considered in the above mass balance calculations (if applicable)?
N/A – No treatment proposed
20c. How has the addition of treatment materials being considered in the above mass balance calculations (if applicable)?
N/A – No treatment proposed

2.7 Contingency Arrangements

Explain what is to happen in the following situations and identify the appropriate clauses in the contract(s) (Such clauses must be provided to the Qualified Person, preferably as a summary document): or

21a. What is to happen to, and who is to pay for out of specification materials?

Contract reference: TBC

This would have to be removed from site as an instruction to the contractor

21b. What is to happen to, and who is to pay for any excess materials?

Contract reference: TBC

This would have to be removed from site as an instruction to the contractor

21c. What happens if the project programme slips in relation to excavated materials or materials under going treatment?

No treatment is required however excavated materials will be stockpiled adjacent to the reuse area in preparation for their reuse. Programme slippage is not an issue as the materials have already begun excavation and the reuse projects are not due to commence for at least several weeks.

Contract reference: TBC

21d. Other identified risk scenarios for the project (relating to excavated materials)?

The materials will be stockpiled adjacent to the areas where the materials are to be reused. To minimise the risk of cross contamination from the ground below, a membrane will be used to create a physical barrier and a visual marker between the made ground beneath and excavated material in the stockpiles. Method statements will be in place to prevent cross contamination and mixing of materials.

2.8 Tracking System

22a. For all sites please describe the tracking system to be employed to monitor materials movements.

Details of the material management procedure are provided as Appendix E.

Where contamination is suspected or known to be present

State the procedures put in place to:

22c. Prevent cross contamination of materials not in need of treatment, wastes awaiting treatment and treated materials

There is no treatment proposed other than hand picking the visible ACM by a licenced contractor.

The ACMs are located in the soils of the Trailer Park and the existing bund around the Eastlands Car Park.

Trailer Park

The bund core will be formed from the shallow soils from the reprofiling of the Trailer Park. This will be handpicked within the Trailer Park area and the asbestos removed from site as waste. The asbestos will be double bagged and stored in a dedicated, lockable skip. Once soils have been handpicked they will be transported to the bund core and profiled into place. The geomembrane will be installed and the clean soils from North Road Car Park placed on top as clean cover. The clean soils are stored outside the Trailer Park and the areas are separated by Heras Fencing.

Eastlands Car Park

The existing car park bund will not be moved. Hand picking of ACM at the surface will follow the same process as above. Once the geomembrane has been installed the clean soils from the segregated stockpile will be used to install the clean cover layer.

22d. Demonstrate that materials that do not require treatment and successfully treated materials reach their specific destination

The Project Manager and Project Engineer will verify the bunds have been constructed as per the design.

22e. Ensure that waste for offsite disposal or treatment is properly characterised and goes to the correct facility

The only wastes associated with the excavation expected to leave site are vegetation and asbestos. These are visually distinct from the soils. Duty of Care checks are in place to ensure that these waste streams only go to appropriately licenced off site facilities.

23. Please attach a copy of the tracking forms / control sheets that are to be used to monitor materials movements. To include transfer of loads on site into stockpiles prior to treatment (if applicable), stockpiled after treatment (if applicable), stockpiled awaiting use (as appropriate) and final placement.

Reference: Material tracking form is included as Appendix E.

For Hub Sites within Cluster Projects & where materials need treatment before reuse

24. Please attach a copy of the Environmental Permit covering the treatment process. Or alternatively if the treatment is covered by a Mobile Plant Permit and associated Deployment Form, attach a copy of the EA agreement to the Deployment Form.

N/A – not hub/cluster arrangement

2.9 Records

25. Where, and in what form, are records to be kept?

Digital copies of the records associated with the site will be provided by the Contractor as part of the Works Information File and handed to JLR at the end of the project for retention.

Note – records e.g. transfer notes, delivery tickets, Desk Top Study, Site Investigation, Risk Assessment(s), Verification Report(s) need to be kept for at least 2 years after the completion of the works and production of the Verification Report.

2.10 Verification Plan

26. Provide or explain the Verification Plan which sets out how you will record the placement of materials and prove that excavated materials have been reused in the correct location and in the correct quantities within the development works.

Reference: The material tracking forms will provide details of the movement and final destination of the excavated materials, see Appendix E. The proposed testing regime is provided in the Remediation Strategy in Appendix B.

Information, including Duty of Care summation, summary of unsuitable soils/wastes and analysis outlined previously will be compiled into Verification Report.

Audits will be undertaken on all contractors operating under the MMP to ensure that the tracking system, material sampling and other requirements are undertaken and up to date. These audits will be incorporated in the Verification Report.

The Verification Reports will detail the following:

- Appropriate site plans;
- Experience and qualifications of the person preparing the report in relation to the specific project;
- Description of the project;
- Description of how the use of materials links with the Remediation Strategy;
- Reference to site investigation data *;
- Reference to risk assessments (including qualitative risk assessments);
- Reference to the MMP and associated tracking system, including alterations made and why;
- Suitable for use criteria;
- Statement confirming no treatment was undertaken;
- Laboratory analysis;
- Reference to waste transfer documentation, including return loads (this may not be applicable to the use of materials within the Site of Origin scenario);
- Record of contingency arrangement(s) that had to be implemented;
- Record of quantity of materials used; and
- Copies of signed Declarations by Qualified Person(s)

STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Arcadis (UK) Limited ('Arcadis') with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with Jaguar Land Rover (the 'Client'). Arcadis does not accept responsibility for any matters outside the agreed scope.
2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.
3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.
4. All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis have no obligation to advise the Client or any other party of such changes or their repercussions.
5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.
6. Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties.
7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.
8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.
9. The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.
10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.
11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on-site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.
13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes

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