



Phase I Geo-Environmental Risk Assessment
Land at North Farm Cottage, North Farm, Embleton

August 2021

Mr R. Manners

Reference: 210726.R.001

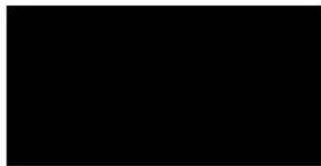
Phase I Geo- Environmental Risk Assessment

**Land at North Farm
Cottage, North Farm,
Embleton**

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EXECUTIVE SUMMARY

SCOPE

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|------------------------------|---|
| Purpose of the Report | This report has been prepared for the purpose of assisting in the evaluation of potential risk associated with contamination issues at the site which is required as part of the planning application for the redevelopment of the site for a residential end-use. It will also identify the physical ground conditions at the site to identify potential development constraints. |
| SITE INFORMATION | |
| Grid Reference | 422900, 623600 |
| Future Site End-use | It is understood that it is proposed to redevelop the site to comprise 6 No. holiday cottages, with associated gardens and areas of soft landscaping. |
| Current Site Status | <p>The site comprises an area of undeveloped land surfaced with well-maintained grass to the north of the North Farm holiday cottages, off the B1339.</p> <p>The land contains a number of undulations and depressions throughout, particularly noticeable within the central area of the site. A water trough and small shed are present in the north-east corner of the site and a septic tank is present in the north. A number of features were noted on the site, including a small rectangular brick feature, potentially comprising relic foundations, with a possible concrete line leading to the north-west corner of the site. Additionally, a linear feature comprising divots and darker grass was present in the north-east of the site potentially indicative of previous ground disturbance.</p> <p>No issues of environmental significance were noted associated with the current use of the site.</p> |
| History | <p>The historical assessment has identified that the site comprised an old quarry, with a pond present within a section of the quarry, from earliest available mapping dated 1863. The quarry appeared to have been infilled as of mapping dated 1975, with the pond remaining. Later, as of 2021, the pond appears to have been infilled and the site comprised its current layout.</p> <p>Surrounding area comprises largely undeveloped land, with North Farm to the south from mapping dated pre-1863 to pre-2021, when it was redeveloped to form holiday accommodation.</p> |
| Geology | <p>According to published BGS data, the site is not mapped as having significant Made Ground materials present on or immediately adjacent to the site. However, given the historic use of the site as a quarry, with the quarry and pond potentially infilled on site, it is considered likely that a depth of Made Ground of an unknown nature and origin is present.</p> <p>A review of BGS information has identified that the site is situated within an area underlain by superficial deposits in the west and north-east of the site comprising Devensian Till. The remaining section of the site lies within an area identified as being free from superficial deposits, though some soils derived from weathered rock may be present. The solid deposits underlying the site are named as the Alston Formation in the west, comprising limestone, sandstone, siltstone and mudstone, and the Four Fathom Limestone Member, comprising limestone, in the east.</p> |
| Radon | The site is located in an area in which 5-10% of homes are above the radon action level. As a consequence, radon protection measures are required in the construction of new dwellings or extensions. |
| Coal Mining | Although the site lies within a Coal Mining Reporting Area, it is not within an area designated as being at risk from Past and Probable Shallow Coal Mine Workings, or a Development High Risk Area. There are no mine entries located on or within a significant distance of the site boundary and no coal seams crop below the site. As such the site is <u>not</u> considered to be at risk from historic coal mining. |
| Hydrogeology | The superficial deposits in the west and north-east of the site and solid geological deposits for the whole site are classified as Secondary (Undifferentiated) and Secondary (A) Aquifers respectively. The subject site is not situated within a |

| | |
|----------------------------------|--|
| | groundwater Source Protection Zone and there are no potable water abstraction licences recorded within 1km of the subject site. |
| Hydrology | There are no potable surface water abstraction licences recorded within 1km of the subject site and there are no GQA classified rivers within 1km of the subject site. An unnamed pond is present 8m south-east. According to the Environment Agency's website, the subject site is located within Flood Zone 1 and is therefore outside the area at significant risk of flooding from rivers and sea. |
| Environmental Sensitivity | As a result of the above, the site is considered to be of Low to Moderate environmental sensitivity. |
| Previous Reports | No previous reports pertaining to the subject site have been made available for review. |
| Regulatory Consultation | A review of Northumberland County Council's online Planning Portal has identified two Planning Applications relating to the site. However, no environmentally pertinent information relating to the subject site was available for review. It is the opinion of Roberts Environmental that there is an absence of significant source-pathway-receptor pollutant linkages. We understand the site is not currently listed as Contaminated Land under the EPA 1990 and it is unlikely that the site would be investigated under the Contaminated Land Regime. From a review of the Envirocheck, there are no Contaminated Land Register Entries and Notices recorded on site or within 1km of the subject site. |

RISK ASSESSMENT (POTENTIAL POLLUTANT LINKAGES)

| | | |
|------------------------------|-----------------|--|
| | Source | For the subject site, historic quarrying activities have been identified that are considered to represent a potential source of contamination. It is also understood that areas of the site may comprise infilled land, with the material and nature of the infill unknown. As such, this could also represent a source of contamination. The potentially infilled quarry and pond on site could represent a source of ground gas generation. |
| Hazard Identification | Pathway | Direct contact or inhalation/ingestion pathways could exist where landscaped areas and/or permeable surfacing is present at the site. Mobile contaminants (where present) have the potential to migrate vertically and laterally via permeable strata. Where present, contamination may impact foundations and services placed on site via direct contact. Ground gas and volatile vapours (where present) may have the potential to impact the site and adjacent receptors. |
| | Receptor | Current site users, visitors, workers and trespassers (Human Health); Future residents and future site users (Human Health); Future properties including foundations and services (Built Environment); Adjacent site users and occupants (Human Health); Adjacent site properties (Built Environment); Planting within landscaped areas and gardens (Built Environment); Groundwater (Controlled Waters); Surface waters (Controlled Waters). |

CONCLUSIONS

| | |
|------------------------|--|
| Risk Estimation | <p>Historic quarrying activities have been identified that are considered to represent a potential source of contamination. It is also understood that areas of the site may comprise infilled land, with the material and nature of the infill unknown. The potentially infilled quarry and pond on site could represent a source of ground gas generation.</p> <p>Based on the information obtained during the desk study it is concluded that the environmental risk arising from the ground conditions at the subject site when taking into account the site's <u>current status and usage</u> is LOW.</p> <p>When considering the <u>proposed redevelopment</u> of the site for a residential end use, it is concluded that the potential <u>environmental risk</u> arising from the ground conditions at the subject site would be LOW to MEDIUM.</p> <p>Based on the above and assuming the recommendations as outlined in Section 17 are undertaken, it is the opinion of Roberts Environmental, that the issues identified should not preclude the future redevelopment of the site.</p> |
|------------------------|--|

As part of the proposed redevelopment, we recommend that the client undertakes the following action:

Recommendations

- In order to assess the load bearing capabilities of the upper strata at the site it would be prudent to undertake an intrusive ground investigation to allow for the collection of geotechnical data to be used to inform future foundation design.
 - During any such investigation environmental samples should be obtained, including ground gas monitoring, to more confidently characterise the ground gas classification of the site and confirm the absence of a significant risk to human health or sensitive receptors.
 - Construction and maintenance work should be subject to risk assessment. Workers should use appropriate procedures and to manage residual risk from exposure to materials on site.
-

1. Instructions

On 28 July 2021, Roberts Environmental Limited ("**REL**") were instructed by George F White on behalf of Mr R. Manners ("**the Client**") to undertake a Phase I Geo-Environmental Risk Assessment ("**the Services**") of Land at North Farm Cottage, North Farm, Embleton, Alnwick, Northumberland, NE66 3DX ("**the Property**"). Part of the Services included the production of this document ("**the Report**").

Our approach is compliant with the National Planning Policy Framework July 2021 which states in item 120, section c) planning policies and decisions should "give substantial weight to the value of using suitable brownfield land...for homes...and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land". In addition, item 183, section a), states policies should ensure that ground conditions and risks from instability and contamination should be suitably assessed. Further reference will be made to the YALPAG Technical Guidance for Developers, Landowners and Consultants for Development on Land Affected by Contamination. Therefore, we have provided this desk-based assessment of the likelihood of the presence of land contamination, its nature and potential risk to the proposed development, and what further measures are required to ensure the site is 'suitable for use'. This report is provided as supporting environmental information to the planning application.

The Services have been carried out in accordance with the Proposal dated 22 April 2021 and REL's Terms and Conditions of Engagement, (together "**the Agreement**") as accepted by the Client on 28 July 2021.

The Report

The Report has been prepared in accordance with the Agreement and is subject to all terms contained therein. The Report is addressed to and is for the sole use and reliance of the Client. REL accepts no liability for:

- (a) any use of or reliance upon the Report by the Client other than in accordance with the Agreement; and
- (b) any use of or reliance upon the Report by any third party who is not a party to the Agreement.

The Report, unless otherwise stated, is based upon:

1. information provided by the Client;
2. database information obtained from regulatory bodies, including but not limited to:
 - a. The Environmental Agency;
 - b. The Local Authority;
 - c. The Coal Authority;
3. the Envirocheck Report (283072514_1_1) purchased from Landmark;
4. a site walkover undertaken REL on 18 August 2021.

Where appropriate the reports of these bodies are contained in **Appendix II**.

2. Location

The subject site is located approximately 0.45km to the north of Embleton village, with the B1339 road running along the western boundary of the site. Alnwick town centre is approximately 10.9km south-west and the A1 dual carriageway lies approximately 6.0km west. Site Location and Layout plans are provided below.

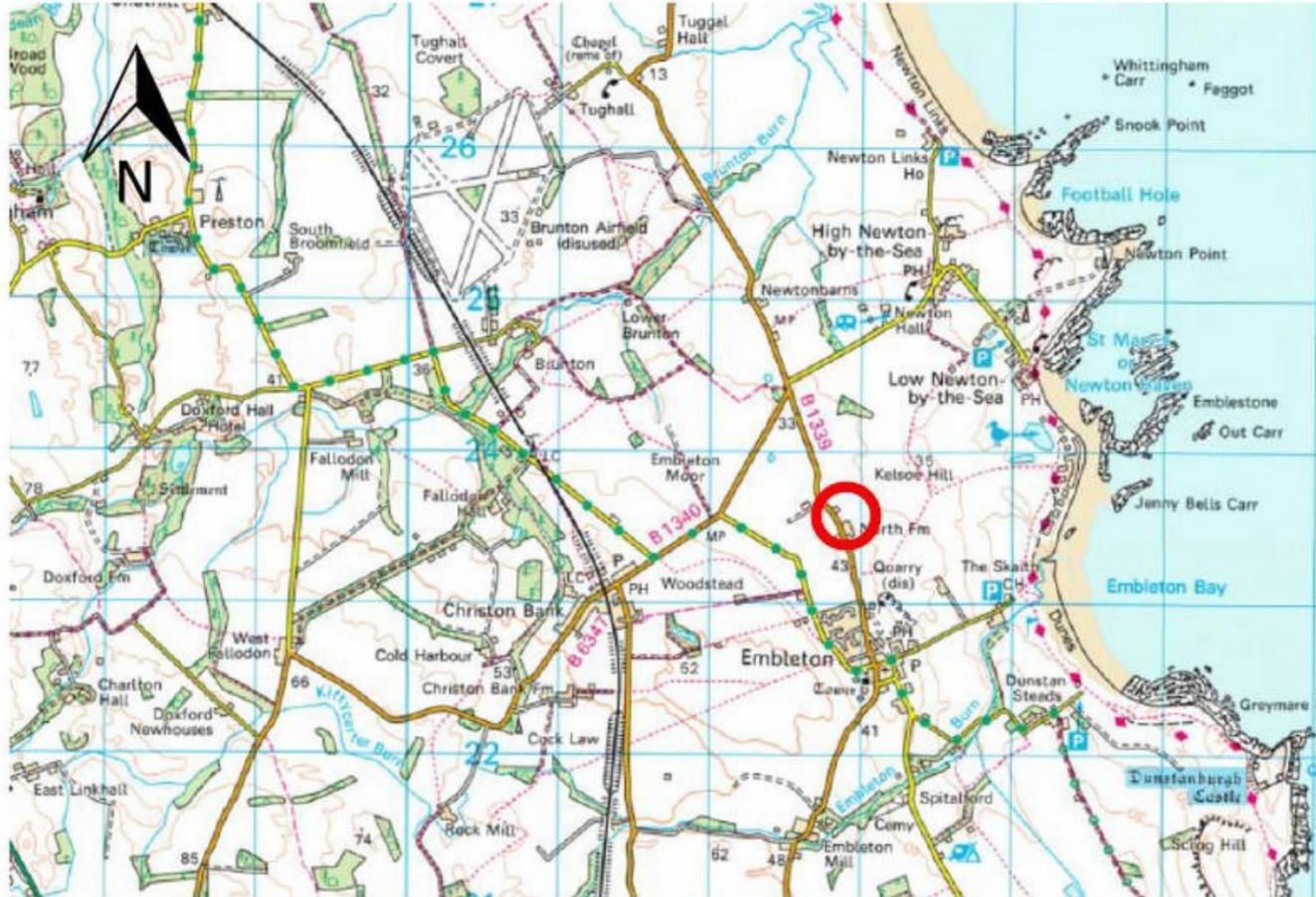


Figure 1: Site Location Plan (location shown in red is indicative only)



Figure 2: Site Layout Plan with boundaries shown in red (boundaries are indicative only).

3. Description

The following table provides a summary of site conditions.

Table 1: Site Description

| Issue | Description |
|--|--|
| Site Name | Land at North Farm Cottage |
| Address | North Farm, Embleton, Alnwick, Northumberland, NE66 3DX |
| National Grid Reference | 422900, 623600 |
| Site Areas | 0.81 hectares |
| Tenure | Freehold |
| Occupancy | Vacant |
| Site Description and Activities | <p>The site comprises an area of undeveloped land surfaced with well-maintained grass to the north of the North Farm holiday cottages, off the B1339.</p> <p>The land contains a number of undulations and depressions throughout, particularly noticeable within the central area of the site. A water trough and small shed are present in the north-east corner of the site and a septic tank is present in the north. A number of features were noted on the site, including a small rectangular brick feature, potentially comprising relic foundations, with a possible concrete line leading to the north-west corner of the site. Additionally, a linear feature comprising divots and darker grass was present in the north-east of the site potentially indicating former ground disturbance in those areas.</p> <p>No issues of environmental significance were noted associated with the current use of the site.</p> <p>From an environmental perspective, the current site operations are not considered to pose a significant ground contamination risk to the continued use of the property.</p> |
| Surrounding land uses | The site is located to the north of Embleton village, with a number of holiday homes adjacent to the south, and north-west. The B1339 road borders the site to the west. A pond and playground are present to the south-east of the site. Wider surrounding areas comprise largely undeveloped agricultural land. |
| Site Gradient | There are variations in topography across the site, with frequent undulations and depressions. However, the site slopes generally gently downward to the east, with the south-east section of the site raised in level compared to the rest of the site. |
| Proposed Use | It is understood that it is proposed to redevelop the site to comprise 6 No. holiday cottages, with associated gardens and areas of soft landscaping. |

| Photograph Number | Photograph Description | Photograph |
|-------------------|---|---|
| 1. | <p>Land at North Farm Cottage, Embleton</p> <p>General view of the site from the west.</p> |  |
| 2. | <p>Land at North Farm Cottage, Embleton</p> <p>General view of the site from the north-east, showing the linear feature present in photo number 9.</p> |  |
| 3. | <p>Land at North Farm Cottage, Embleton</p> <p>General view of the south-east of the site from the north.</p> |  |

| Photograph Number | Photograph Description | Photograph |
|-------------------|---|---|
| 4. | <p>Land at North Farm Cottage, Embleton</p> <p>General view of areas of undulations and depressions which are present across much of the site.</p> |  |
| 5. | <p>Land at North Farm Cottage, Embleton</p> <p>Close up of a small rectangular feature in centre of site, potentially comprising relic foundations (or possible historic septic tank).</p> |  |
| 6. | <p>Land at North Farm Cottage, Embleton</p> <p>View of line leading from north-west corner of site to the small square of possible relic foundations (shown in photo number 5). Line appears to comprise potential concrete.</p> |  |

| Photograph Number | Photograph Description | Photograph |
|-------------------|---|---|
| 7. | <p>Land at North Farm Cottage, Embleton</p> <p>View of water trough and shed present in north-west corner of site.</p> |  |
| 8. | <p>Land at North Farm Cottage, Embleton</p> <p>Close up of septic tank present below ground in north of site.</p> |  |
| 9. | <p>Land at North Farm Cottage, Embleton</p> <p>Close up of feature in the north-east of the site. Areas of divots within the ground were present in a linear feature accompanied by an area of darker grass.</p> |  |

4. Operational Issues

Deleterious Materials

The Control of Asbestos Regulations 2012 came into effect in April 2012. These repeal earlier asbestos legislation. Owners, occupiers, managers and/or those who have responsibilities for premises have a legal duty to either manage the risk of asbestos or a duty to co-operate with whoever manages that risk.

The responsible party has to identify the existence of Asbestos Containing Materials (ACM's), record their location and condition, set out a plan to manage the risk from the material and take the necessary steps to put this plan into action.

An appropriately licensed asbestos contractor should remove ACM's that are likely to be disturbed and cannot be easily protected. Reviews of this plan will have to be undertaken on an on-going basis. Details as to the location and condition of the materials must be provided to anyone who is liable to work on or disturb them.

Asbestos Survey

Given there are no structures currently present on site, no asbestos survey has been presented for review as part of this assessment. No suspected Asbestos Containing Materials (ACMs) were identified at the subject site during the site walkover. However, given the possible relic foundations identified on site, there is the potential for ACMs to have been previously present in the fabric of any building, as the age and construction of the structure are unknown.

Future development of the site will likely require an intrusive ground investigation to allow for the collection of geotechnical data to be used to inform future foundation design. During which time it may be prudent to include a scope to confirm the absence of asbestos/contamination and a significant risk to human health or sensitive receptors.

Site Services

Specific details pertaining to the presence or nature of buried utilities/services beneath the site are not known at this stage. A number of manhole covers were noted across the site during the site walkover, indicating the presence of buried services. Additionally, a septic tank was present in the north of the site. Prior to commencement of any groundworks, it would be prudent to undertake a utilities clearance and or mapping survey to ensure damage to utilities and other services is prevented. Such a survey would also identify current service routes and connections to aid future development plans.

Fuel and Oil Above/Below Ground Tanks

Based on information obtained from the Envirocheck Report and observations made during the site inspection REL are unaware of above/below ground fuel/oil storage tanks being situated on site. However, a below ground septic tank was present in the north of the site.

Chemical Storage

No significant volumes or quantities of bulk chemicals are understood to be used or stored on site.

Waste Management Practices

No environmentally significant volumes/types of waste are anticipated to be produced at, or stored on, the site.

Invasive Plants

The Wildlife and Countryside Act 1981 (as amended) is the principal legislation which regulates the release of non-native species. Section 14(2) prohibits the release of certain invasive non-native plants into the wild in Great Britain; it is an offence under Section 14(2) to "*plant or otherwise cause to grow in the wild*" any plants listed on Part II of Schedule 9. The most common plant species found on brownfield and urban sites include Japanese Knotweed, Giant Hogweed and Himalayan Balsam.

Although we are not qualified to undertake ecological surveys, none of these plants are known to be present on site. Should further confidence be required, a survey by a suitably qualified ecological consultant would be required.

5. Historical Development

A review of historical maps contained within the Envirocheck Report (283072514_1_1) has been undertaken. A summary of relevant information, within 250m of the property (i.e. in the planning consultation zone), is shown in chronological order in the table below with relevant maps in **Appendix I**. All distances listed below are approximate.

Table 2: Historical Development description of the subject site and surrounding land.

| Source | Site | Surroundings |
|------------------------|--|--|
| Pre 1863 – pre 1923 | As of earliest available mapping, an Old Quarry was denoted in the centre of the site, with a Pond present in a section of the old quarry. A footpath ran through the west of the site. By 1897, the footpath was no longer present on site, and the pond was denoted are larger. | The subject site lay within an area comprising largely undeveloped agricultural land. A road ran adjacent to the western boundary of the site, North Farm was present 20m south and single building was present 5m north-west. A Pond was adjacent to the south-east of the site and a well was denoted 210m east. As of mapping dated 1897, a well was also present 2m south of the site. |
| Pre 1923 – pre 1975 | The site remained unchanged. | By 1923, the wells were no longer denoted and a Sheepwash was present 50m south-east. Surrounding land remained largely unchanged. |
| Pre 1975 – pre 2006 | By 1975, the quarry was no longer present, likely Infilled , however the pond remained in the centre of the site. An aerial photograph of the site in 1999, shows a circular feature (unidentified) in the north of the site. | As of 1975, the pond to the south-east was reduced in size and present 10m south-east of site. North Farm had been redeveloped with new buildings and layout, with an agricultural building present adjacent to the south of the site. |
| Pre 2006 – Pre 2021 | As of 2006, the pond on site was denoted as longer and slightly curved. No further features are shown on site. | By 2006, further redevelopment of North Farm had occurred. The sheepwash was no longer present. The pond was no longer present to the south-east with the area denoted as rough grassland. |
| Pre 2021 – present | By 2021, the pond is no longer present on site, potentially Infilled . The site comprised its current layout. | As of 2021, a Pond was present 8m south-east of the site. The farm to the south had been completely redeveloped to comprise holiday cottages, with leisure facilities adjacent to the south of the site. An additional building was also present 210m north-east. Surrounding land use comprised its current layout. |

* Potentially contaminative land uses in **bold italic**.

Potential for Historical Contamination

The historical assessment has identified that there has historically been a quarry and pond on site, which appear to have been infilled pre-1975 and pre-2021 respectively. With respect to infilled ground, there is the potential for ground gas to be generated from fill materials, which can be influenced by numerous factors such as: organic matter content size, age, moisture content etc.

Information on the infilled ground would indicate that any infill material present is likely less than 50 years old, with infilling of the pond potentially occurring within the last 10 years. As the primary mechanism for the generation of ground gas is the biodegradation of organic matter, degradation of any organic matter present within the pond infill is likely to still be ongoing due to the relatively recent nature of the fill.

This agrees with the findings of CIRIA C665 – Assessing Risks Posed by Hazardous Gases to Buildings. Section 7.2.5 (Figure 7.1), which details that landfill gas generation rates significantly reduces with the age of the waste. By 30 years, the rate of gas generation is likely to be insignificant, and by 50 years, the rate is likely to be minimal.

As such, the risk of gas generation from the infilled quarry can be considered low, though the more recently infilled pond can be considered to be medium risk with regards to ground gas generation. Additionally, as the material used for infill is unknown, there is the potential for contaminants to be present on site. Additionally, historic quarrying activities may also have resulted in possible areas of ground contamination.

6. Previous Reports

A request has been made for previous reports relating to the subject site. However, at the time of writing no reports were forthcoming. As a consequence, no previous reports were subject to review during the compilation of this report.

7. Geological Setting

The geology beneath the site, summarised below, has been established from the British Geological Survey (BGS) Geological Survey of England and Wales 1:63,360/1:50,000 geological map series, New Series sheet 6 (Alnwick), together with information from the BGS website.

Made Ground:

According to published BGS data, the site is not mapped as having Made Ground materials present on or immediately adjacent to the site. However, given the historic use of the site as a quarry, with the quarry and pond potentially infilled on site, it is considered likely that a depth of Made Ground of an unknown nature and origin is present.

Drift Geology:

A review of BGS information has identified that the site is situated within an area underlain by superficial deposits in the west and north-east of the site comprising Devensian Till of the Quaternary Period. The remaining section of the site lies within an area identified as being free from superficial deposits, though some soils derived from weathered rock may be present.

Solid Geology:

Published BGS data has identified that the site is underlain by solid deposits named as the Alston Formation in the west, comprising limestone, sandstone, siltstone and mudstone of the Carboniferous Period, and underlain by solid deposits named as the Four Fathom Limestone Member, comprising limestone of the Carboniferous Period, in the east.

Borehole Logs

No archive BGS borehole logs or other ground investigation information is available for the subject site and there are no borehole logs within the local surrounding area containing information considered relevant to the subject site.

8. Coal Mining Risk Assessment

Coal Authority Interactive Mapping Service

According to the Coal Authority Interactive mapping tool, the site is positioned in a Coal Authority Reporting Area. However, the site is not within a 'Development High Risk Area' (DHRA) or an area designated as being at risk from Past and Probable Shallow Coal Mine Workings. There are no mine entries shown on site and no coal outcrops on site.

Coal Mining Risk

Having undertaken a detailed review of the available geological and Coal Authority information relating to the subject site, it has been determined that the subject site is not positioned close to an area that is potentially at risk from ground stability issues associated with past shallow coal workings. When considering the subject property, the risk from shallow coal mine workings is considered to be low.

Although the site lies within a Coal Mining Reporting Area, it is not within an area designated as being at risk from Past and Probable Shallow Coal Mine Workings, or a DHRA. There are no mine entries located on or within a plausible influencing distance of the site boundary and no coal seams crop below the site.

Therefore, taking the above information into account, there is not considered to be a risk to the site from historic coal mining activity and no further investigation work is required in this respect.

Stythe Ground Gas

The site is located within a Coal Mining Reporting Area, however, the site is not underlain by any known worked coal seams. As such, given the information above, REL can conclude that there is not a plausible significant risk for the potential for stythe gas generation beneath or within the vicinity of the subject site.

However, although no sources of stythe gas have been identified within the vicinity of the subject site, in line with Northumberland County Council's policy regarding developments within Coal Mining Reporting Areas, it is likely that ground gas protective measures to CS-2 standard would be expected to be installed in any habitable dwellings being erected/developed. Early consultation with Northumberland County Council on this matter is recommended.

9. Hydrogeology

Aquifer Status

According to the Envirocheck Report and the Environment Agency website, the superficial deposits in the west and north-east of the site, are classified as a Secondary (Undifferentiated) Aquifer, which is assigned in cases where it has not been possible to attribute either category A or B to a rock type.

The bedrock deposits are classified as a Secondary (A) Aquifer, which comprise permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Groundwater Source Protection Zone

The subject site is not located within a groundwater Source Protection Zone.

Groundwater Abstraction Licences

Based on information presented within the Envirocheck Report, there are no groundwater abstraction licences registered within 1km of the subject site.

10. Hydrology

Surface Watercourses

There are no significant surface water features within the vicinity of the subject site. An unnamed pond is present approximately 8m south-east of the site

Culverted Watercourses

We are unaware of any culverted watercourses being present at the property. Although none are anticipated, should clarification on this point be required, it would be necessary to undertake an intrusive drainage survey to trace the location of the drainage infrastructure.

Surface Water Abstractions

Based on information presented within the Envirocheck Report, there are no surface water abstraction licences registered within 1km of the subject site.

Flood Risk

According to the Environment Agency database mapping, the site is situated within Flood Zone 1, which is land assessed as having between a 1 in 1,000 annual probability of river flooding (1% – 0.1%), in any year, and is therefore not considered to be at risk from flooding.

Information reviewed within the Envirocheck Report has identified that the site is within an area where there is a limited potential for groundwater flooding to occur in the west of the site and limited potential for groundwater flooding of property located below ground level in the east of the site. Localised areas of the site may experience surface water flooding particularly during periods of high rainfall. For further advice, consultation with a drainage engineer would be required.

11. Environmental Sensitivity

The superficial deposits in the west and north-east of the site and solid geological deposits for the whole site are classified as Secondary (Undifferentiated) and Secondary (A) Aquifers respectively. The subject site is not situated within a groundwater Source Protection Zone and there are no potable water abstraction licences recorded within 1km of the subject site. There are no GQA classified rivers within 1km of the subject site. An unnamed pond is present 8m south-east. Additionally, the site lies within the Northumberland Coast Area of Outstanding Natural Beauty (AONB). As such, the site location is considered to be of **Low to Moderate** environmental sensitivity.

12. Regulatory Databases

From a review of the Envirocheck Report (283072514_1_1), presented in **Appendix II**, no significant regulatory database entries have been identified within a 250m radius of the subject site.

Table 3. Regulatory Database review results.

| Record | On site | Within 250m Radius | Details |
|---------------------------------|---|--------------------|---|
| Discharge Consents (Active) | 0 | 1 | There is a record of one discharge consent 6m to the east held by John Manners Limited for Sewage Discharges - Final/Treated Effluent - Not Water Company to groundwaters via a soakaway. |
| Environmental Permits (Active) | 0 | 0 | Not Applicable (N/A). |
| Radioactive Substances (Active) | 0 | 0 | N/A. |
| COMAH Site (Active) | 0 | 0 | N/A. |
| Pollution Incidents | 0 | 0 | N/A. |
| Landfill Sites | 0 | 0 | N/A. |
| Infilled land | 1 | 0 | There is a record on site relating to Unknown Filled Ground (Pit, quarry etc), dated 1978. |
| Fuel Sites | 0 | 0 | N/A. |
| BGS Recorded Mineral Sites | 1 | 0 | There is a record on site relating to an opencast limestone quarry, named as North Farm, for which operations have ceased. |
| Radon | The site is located in an area in which 5-10% of homes are above the radon action level. As a consequence, radon protection measures are required in the construction of new dwellings or extensions. | | |

UXO Assessment

Following a review of a Zetica Unexploded Bomb Risk Map for the area in which the site is located, it appears that the site is located in an area with a **Low** risk. As such, no further works are considered necessary for the proposed redevelopment of the site. Please refer to **Appendix II** for a copy of the Zetica Map.

13. Regulatory Enquiries

Planning

A review of Northumberland County Council's online Planning Portal has identified 3 No. planning applications, detailed below.

- A/2010/0284 - Conversion of 3no. redundant farm buildings into 4 no. holiday lets;
- 18/01328/ELEGDO - Erection of a new pole with upgraded transformer;
- 20/03155/FUL - 6no. tourism units with associated access, parking and amenity space; and
- 21/02608/VARYCO - Variation of condition 2 (approved plans) on approved application 20/03155/FUL to allow changes to layout and design.

No environmentally pertinent information relating to the property was made available, following a review of the planning applications.

Contaminated Land

According to the Landmark Report, there are no Contaminated Land Register Entries and Notices, recorded within 1km of the subject site. Based on information reviewed during the compilation of this report, it is the opinion of Roberts Environmental that there is an absence of significant source-pathway-receptor pollutant linkages. We understand the site is not currently listed as Contaminated Land under the EPA 1990 and it is unlikely that the site would be investigated under the Contaminated Land Regime.

14. Preliminary Conceptual Site Model

Potential Sources

For the subject site, historic quarrying activities have been identified that are considered to represent a potential source of contamination. It is also understood that areas of the site may comprise infilled land, with the material and nature of the infill unknown. As such, this could also represent a source of contamination.

The potentially infilled quarry and pond on site could represent a source of ground gas generation.

Potential Pathways

Current

The site comprises undeveloped land. The site is accessed infrequently and for limited durations. As such, exposure to site soils by current site users would be limited.

Vertical and lateral migration of mobile contaminants (if present) would be restricted by the likely presence of relatively impermeable superficial deposits, limiting the risk to underlying groundwater and adjacent properties including residential occupants.

Ground gas and volatile vapours (where present) may have the potential to impact on the buildings and adjacent receptors via upward and lateral migration through soil pores or discontinuities and ingress into the proposed developments.

During Redevelopment

Ground workers could be acutely exposed to contamination (if present) in soils and groundwater beneath the site via the direct contact or inhalation/ingestion pathways.

Intrusive works into the subsurface could result in the mobilisation of contaminants (if present) into groundwaters and to the adjacent areas.

In addition, intrusive works could also displace potential gases and vapours, opening lateral and vertical migration routes into service runs and confined spaces (if present).

Post Site Development

Direct contact or inhalation/ingestion pathways could exist where gardens/landscaped areas and/or permeable surfacing is proposed at the site.

Vertical and lateral migration of mobile contaminants (if present) would be restricted by the likely presence of relatively impermeable superficial deposits, limiting the risk to underlying groundwater and adjacent properties including residential occupants.

If present, contamination may impact foundations and services on site via direct contact.

Ground gas and volatile vapours (where present) may have the potential to impact on the buildings and adjacent receptors via upward and lateral migration through soil pores or discontinuities and ingress into the proposed developments.

Potential Receptors

The key receptors at the site have been identified as:-

Current

- Potential site users, visitors, workers and trespassers (Human Health);
- Adjacent residential properties (Build Environment);
- Adjacent site occupants and users (Human Health);
- Groundwater (Controlled Waters);
- Surface waters (Controlled Waters).

During Site Development

- Construction/ground workers (Human Health);
- Adjacent residential properties (Build Environment);
- Adjacent site occupants and users (Human Health);
- Groundwater (Controlled Waters);
- Surface waters (Controlled Waters).

Post Site Development

- Future residents and future site users (Human Health);
- Future properties including foundations and services (Built Environment);
- Planting within landscaped areas and gardens (Built Environment);
- Adjacent residential properties (Build Environment);
- Adjacent site occupants and users (Human Health);
- Groundwater (Controlled Waters);
- Surface waters (Controlled Waters).

15. Environmental Risk Assessment

Regulatory Regime

In order to assess the risks associated with the presence of ground contamination, the linkages between the sources and potential receptors need to be established and evaluated. This is in accordance with Part 2A of the Environmental Protection Act (EPA) 1990, which provides a statutory definition of Contaminated Land and as revised under The Contaminated Land (England) (Amendment) Regulations 2012. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that:

- Significant harm is being caused or there is a significant possibility of such harm being caused; or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused;
- Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted, and the potential pathways between them. A contaminant linkage must exist in relation to particular land before the land can be considered potentially to be contaminated land under Part 2A, including evidence of the actual presence of contaminants.

Risk Exposure

The risk of significant harm to human health or of pollution of controlled waters given the current and proposed future site uses has been assessed qualitatively as low, medium or high, see **Appendix III**. A risk estimation matrix for all pollutant linkages identified is shown on the following page.

Table 4. Environmental Risk Assessment.

| Receptor | Potential sources | Pathways | Risk | Justification |
|-----------------------|--|--|------|---|
| Human Health | | | | |
| Current site users | Potential contamination in soils and groundwater. | Direct contact, ingestion, inhalation of dusts and/or fibres | Low | <p>No potentially significant sources of contamination have been identified.</p> <p>There is potential for some contamination relating to historic quarrying activities, and potential subsequent infilling of the quarry and pond on site.</p> <p>Exposure to residual contamination (if present) would be limited when considering the limited duration of site occupation.</p> |
| | Ground gas and/or vapour generated by contaminated land/mine workings. | Passive migration of gas/vapour and build-up of harmful concentrations. | Low | <p>Areas of potential infilling relating to a quarry and pond have been identified on site. There is the potential for ground gas generation from materials used for infilling.</p> <p>The largely undeveloped nature of the site will provide a preferential pathway for any ground gas (if present) to rapidly diffuse to natural atmospheric conditions.</p> |
| Future ground workers | Potential contamination in soils and groundwater. | Direct contact, ingestion, inhalation of dusts and/or fibres. | Low | <p>No potentially significant sources of contamination have been identified.</p> <p>There is potential for some contamination relating to historic quarrying activities, and potential subsequent infilling of the quarry and pond on site.</p> <p>Groundworkers may become more acutely exposed to residual contamination in site soils and groundwaters.</p> <p>Groundworkers should be subject to risk assessment and be provided with and make use of appropriate PPE.</p> |
| | Ground gas and/or vapour generated by contaminated land/mine workings. | Passive migration/displacement of gas/vapour and build-up of harmful concentrations. | Low | <p>Areas of potential infilling relating to a quarry and pond have been identified on site. There is the potential for ground gas generation from materials used for infilling.</p> <p>Groundworks will be undertaken in open air and are unlikely to extend to a significant depth. Excavations will be well ventilated.</p> <p>Workers should be subject to risk assessment. Workers should use appropriate procedures to manage risk from exposure to materials on site.</p> |

| Receptor | Potential sources | Pathways | Risk | Justification |
|---|---|--|---------------|--|
| Future users site | Potential contamination in soils and groundwater. | Direct contact, ingestion, inhalation of dusts and/or fibres. | Low to Medium | No potentially significant sources of contamination have been identified. There is potential for some contamination relating to historic quarrying activities, and potential subsequent infilling of the quarry and pond on site. Future residents may be exposed to residual contamination in future soft landscaped/garden areas. It would be considered prudent to undertake chemical analysis of soil samples from the site to confirm the absence of a significant risk. |
| | Ground gas and/or vapour generated by contaminated land/mine workings. | Migration of gas and build-up of harmful concentrations. | Low to Medium | Areas of potential infilling relating to a quarry and pond have been identified on site. There is the potential for ground gas generation from materials used for infilling. As the site lies within the Northumbrian Coalfield, Northumberland County Council policy may indicate the need to install gas protective measures in line with CS-2 in the proposed development. Additionally, the site lies within an Intermediate Radon area, as such, basic radon protection measures will be required in the construction of any new dwellings. |
| Property | | | | |
| Future residential property and associated services | Potential contamination in soils and groundwater. | Direct contact with foundations and services. Migration and build-up of potentially explosive concentrations of volatile contaminants. | Low | No significant potential sources of contamination have been noted on site which have the potential to damage on-site properties. |
| | Ground gas and/or vapour generated by contaminated / infilled land (made ground)/mine workings. | Migration and build-up of potentially explosive concentrations of volatile contaminants. | Low | Areas of potential infilling relating to a quarry and pond have been identified on site. There is the potential for ground gas generation from materials used for infilling. As the site lies within the Northumbrian Coalfield, Northumberland County Council policy may indicate the need to install gas protective measures in line with CS-2 in the proposed development. Additionally, the site lies within an Intermediate Radon area, as such, basic radon protection measures will be required in the construction of any new dwellings on site. |

| Receptor | Potential sources | Pathways | Risk | Justification |
|---|---|---|------|---|
| Future planting within gardens and landscaped areas | Potential phytotoxic soil, groundwater. | Direct contact with roots and plant uptake. | Low | Current on and off-site vegetation appeared in good condition. Based on available information, it is considered unlikely that contamination exists at the site with the potential to cause significant harm to plants situated on site. |
| Controlled Waters | | | | |
| Surface Waters | Potential soil and groundwater contamination. | Lateral migration of mobile contaminants via groundwater. | Low | There are no significant surface water features within the vicinity of the subject site. An unnamed pond is present approximately 8m south-east of the site. However, no significant potential sources of contamination have been recorded on site. Localised residual contamination may be present in some areas. Low permeability superficial deposits would restrict contaminant migration. |
| Groundwater within the Aquifer deposits | Potential contamination in soils and groundwater. | Migration of mobile contaminants into groundwater. | Low | No significant potential sources of contamination have been recorded on site. Localised residual contamination may be present in some areas. Low permeability superficial deposits would restrict contaminant migration. The site is not located within a groundwater Source Protection Zone and there are no abstraction licences recorded within 1km of the subject site. |
| Overall Risk Rating | | | | LOW to MEDIUM |

16. Conclusions

This report has been prepared for the purpose of assisting in the evaluation of potential risk associated with contamination issues at the site which is required as part of the planning application for the redevelopment of the site.

The site comprises an area of undeveloped land surfaced with well-maintained grass to the north of the North Farm holiday cottages, off the B1339. It is understood that it is proposed to redevelop the site to comprise 6 No. holiday cottages, with associated gardens and areas of soft landscaping.

Historic quarrying activities have been identified that are considered to represent a potential source of contamination. It is also understood that areas of the site may comprise infilled land, with the material and nature of the infill unknown. The potentially infilled quarry and pond on site could represent a source of ground gas generation.

Based on the information obtained during the desk study it is concluded that the environmental risk arising from the ground conditions at the subject site when taking into account the site's current status and usage is **LOW**.

When considering the proposed redevelopment of the site for a residential end use, it is concluded that the potential environmental risk arising from the ground conditions at the subject site would be **LOW to MEDIUM**.

Based on the above and assuming the recommendations as outlined in Section 17 are undertaken, it is the opinion of Roberts Environmental, that **the issues identified should not preclude the future redevelopment of the site**.

17. Recommendations

As part of the proposed redevelopment, we recommend that the client undertakes the following action:

- In order to assess the load bearing capabilities of the upper strata at the site it would be prudent to undertake an intrusive ground investigation to allow for the collection of geotechnical data to be used to inform future foundation design.
- During any such investigation environmental samples should be obtained, including ground gas monitoring, to more confidently characterise the ground gas classification of the site and confirm the absence of a significant risk to human health or sensitive receptors.
- Construction and maintenance work should be subject to risk assessment. Workers should use appropriate procedures and to manage residual risk from exposure to materials on site.

Definitions and Reservations used in this report are presented in **Appendix III**.

APPENDIX I HISTORICAL MAPPING



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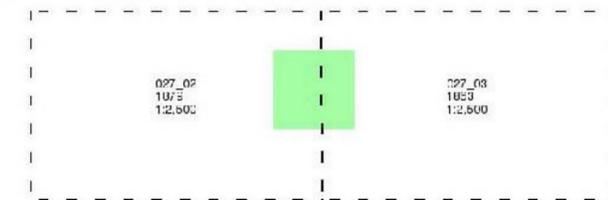
Northumberland

Published 1863 - 1879

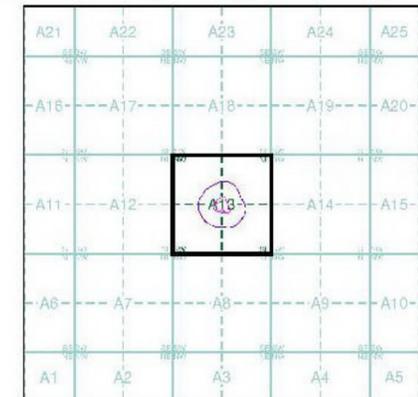
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Map Name(s) and Date(s)



Historical Map - Segment A13



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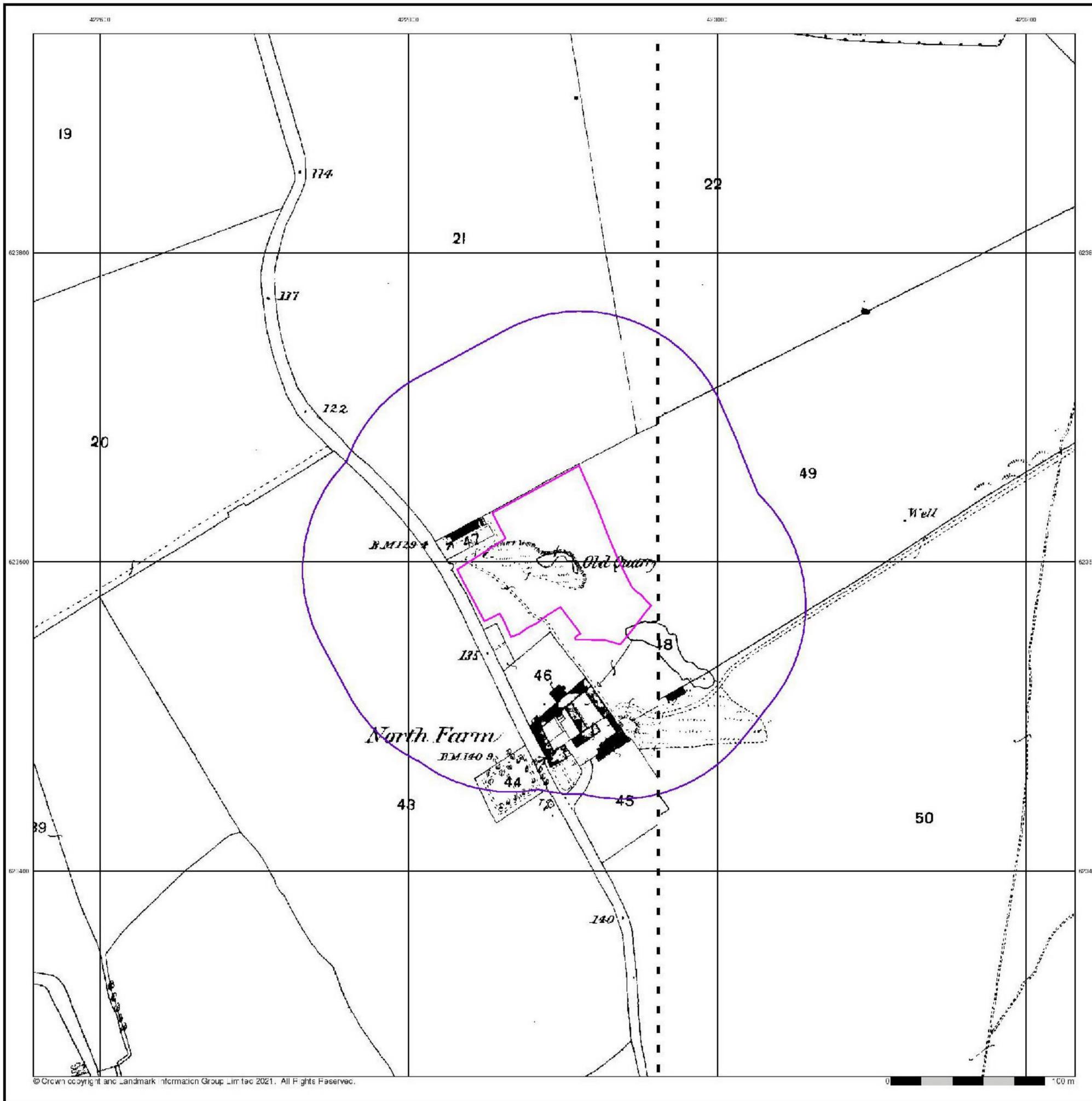
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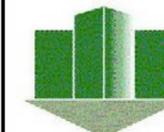
Site Details

Land at North Farm Cottage, North Farm, Embleton,
ALNWICK, NE66 3DX

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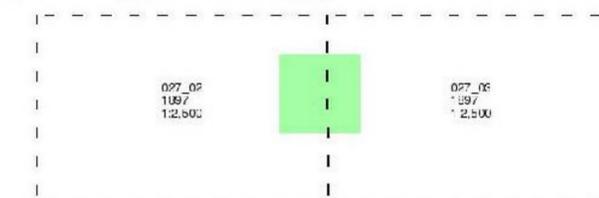
Northumberland

Published 1897

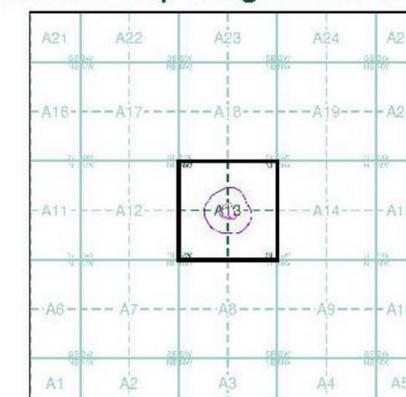
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Map Name(s) and Date(s)



Historical Map - Segment A13



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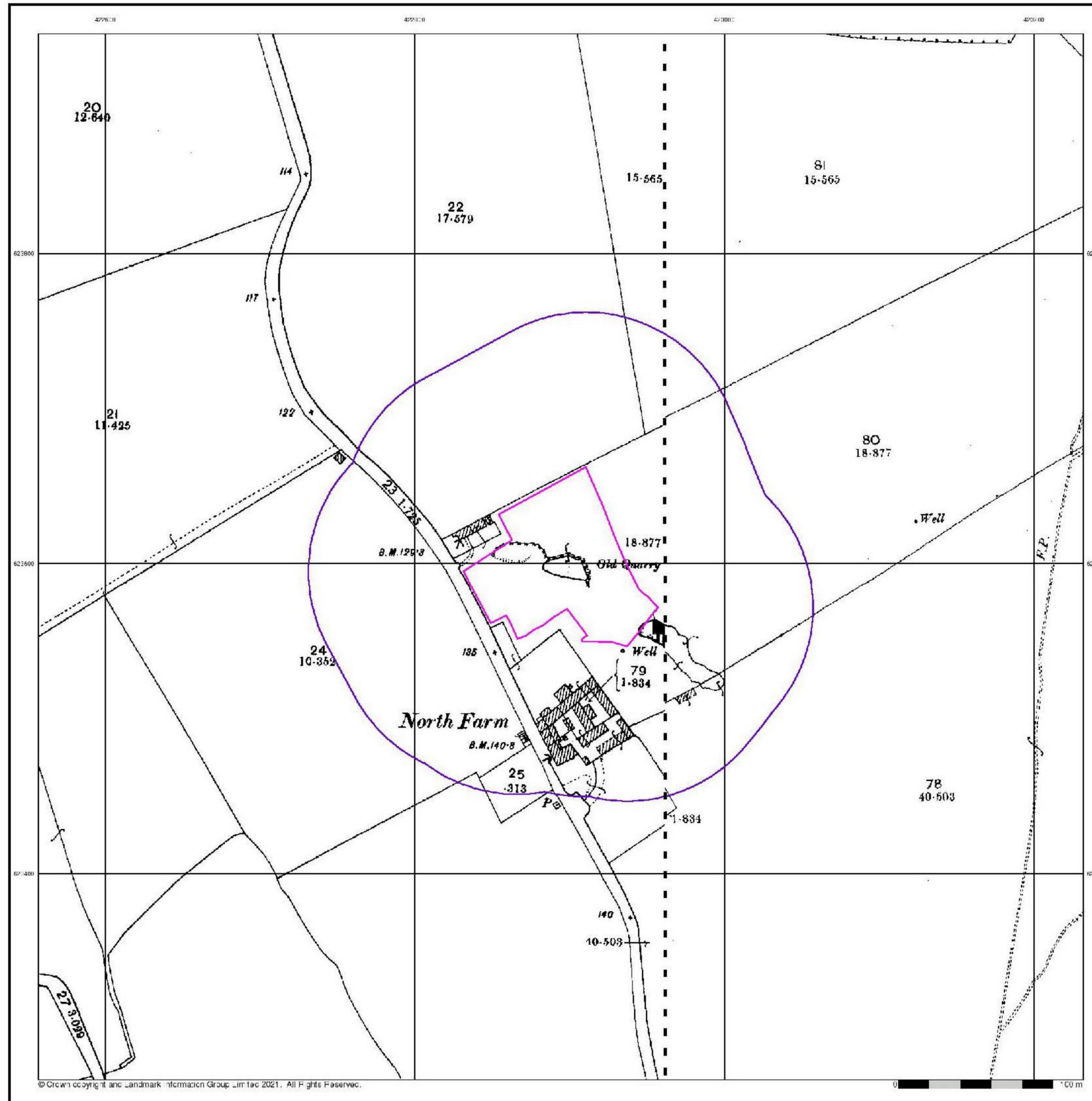
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Northumberland

Published 1923

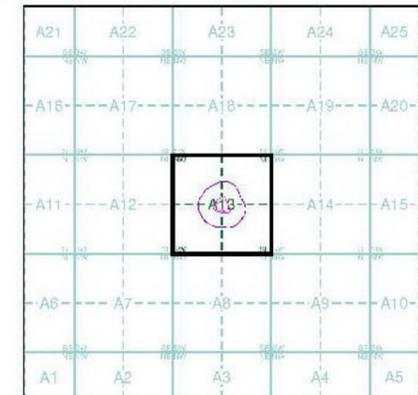
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Map Name(s) and Date(s)

| | |
|---------------------------|---------------------------|
| 023_07 1923 1:2,500 | 023_08 1923 1:2,500 |
| 023_11 1923 1:2,500 | 023_12 1923 1:2,500 |

Historical Map - Segment A13



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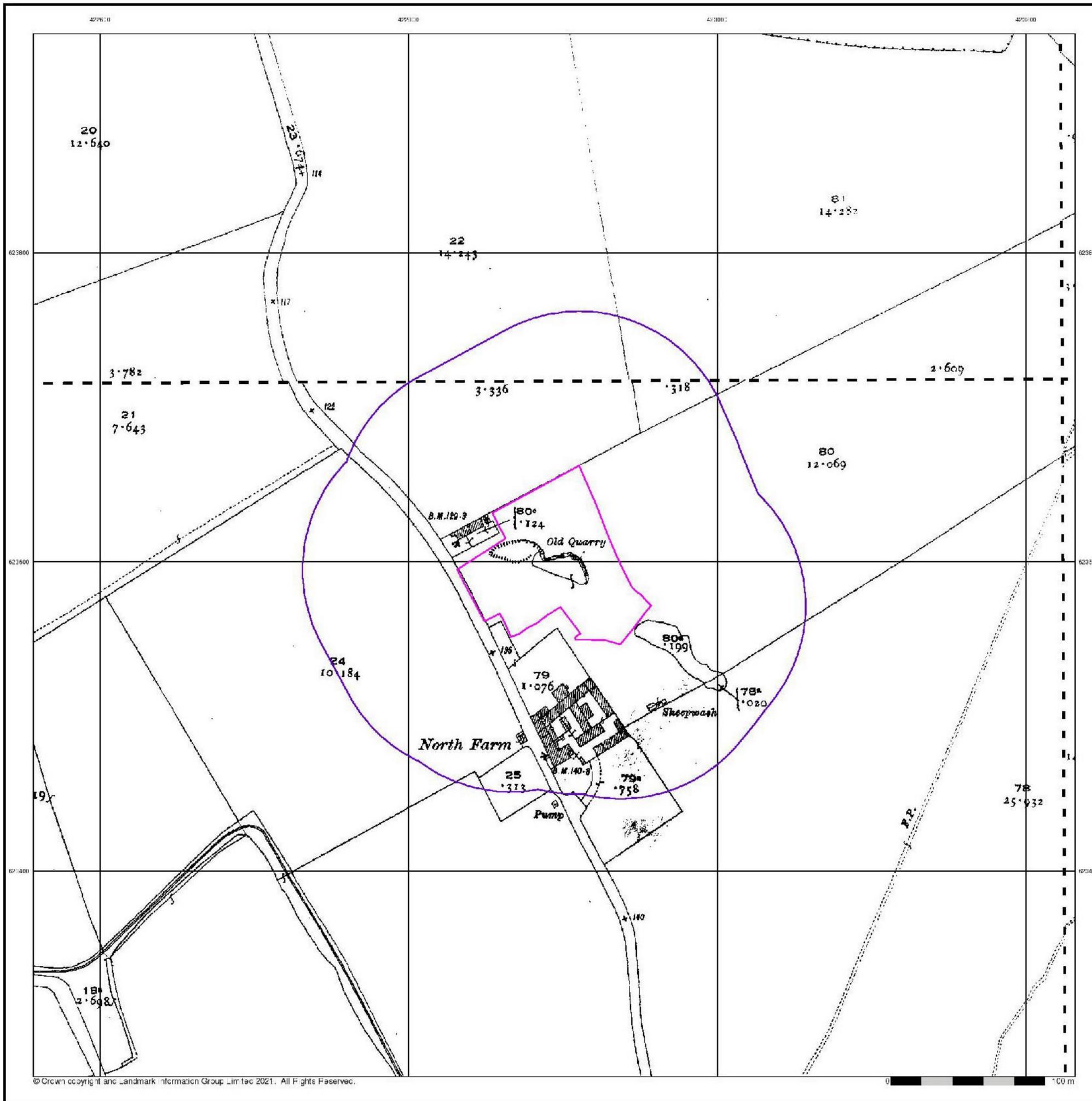
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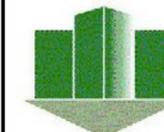
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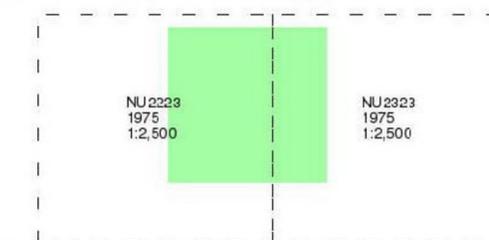
Ordnance Survey Plan

Published 1975

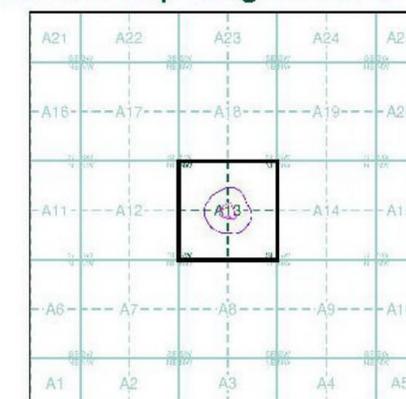
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Map Name(s) and Date(s)



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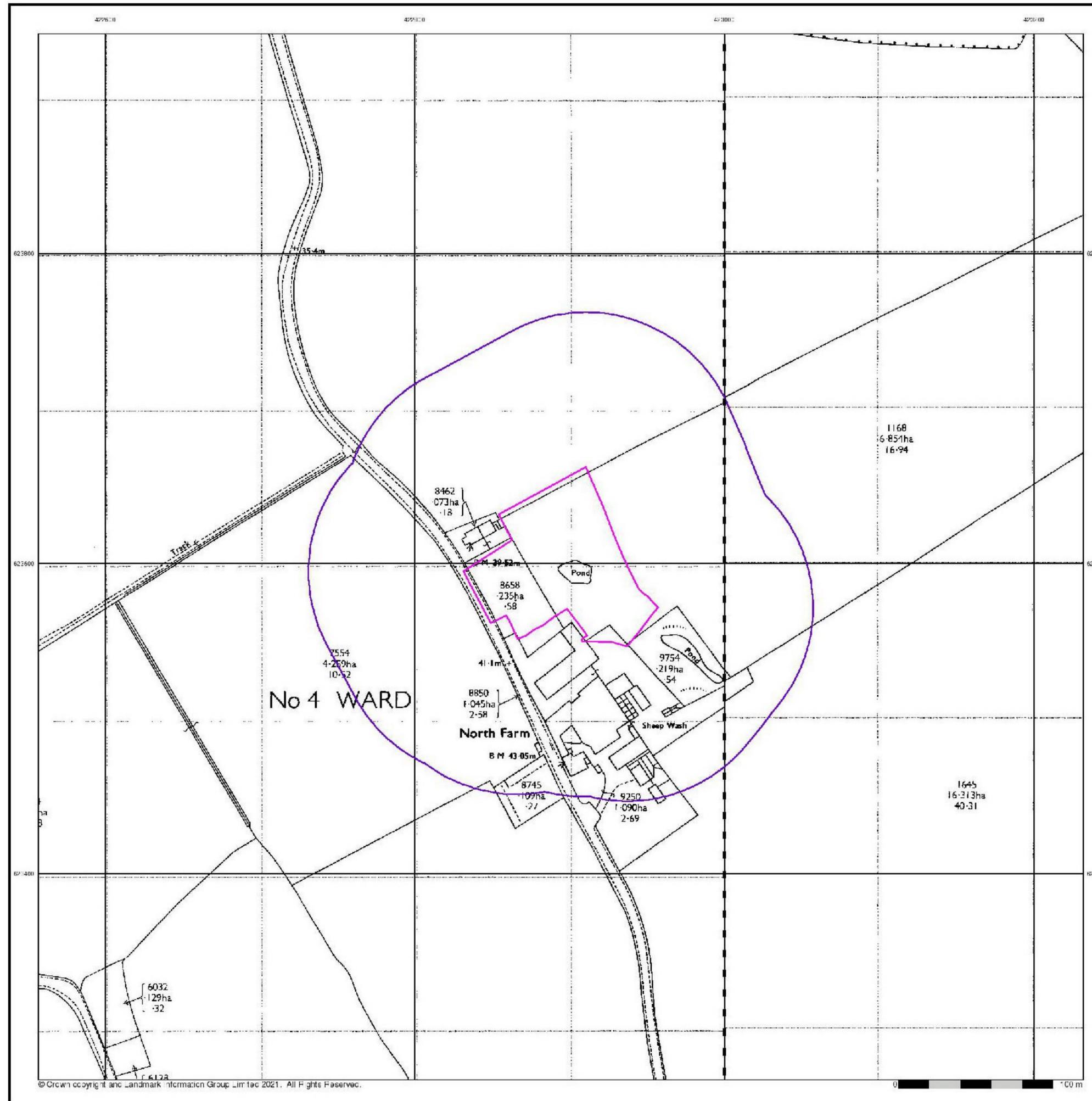
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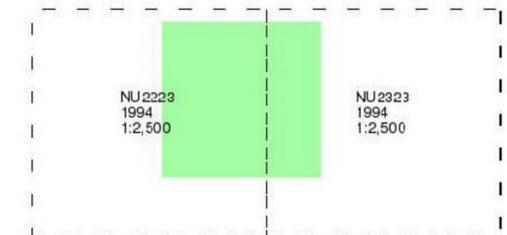
Large-Scale National Grid Data

Published 1994

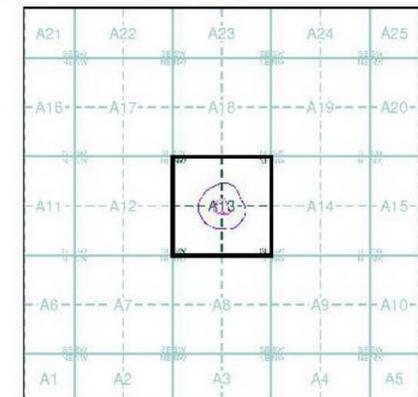
Source map scale - 1:2,500

'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)



Historical Map - Segment A13



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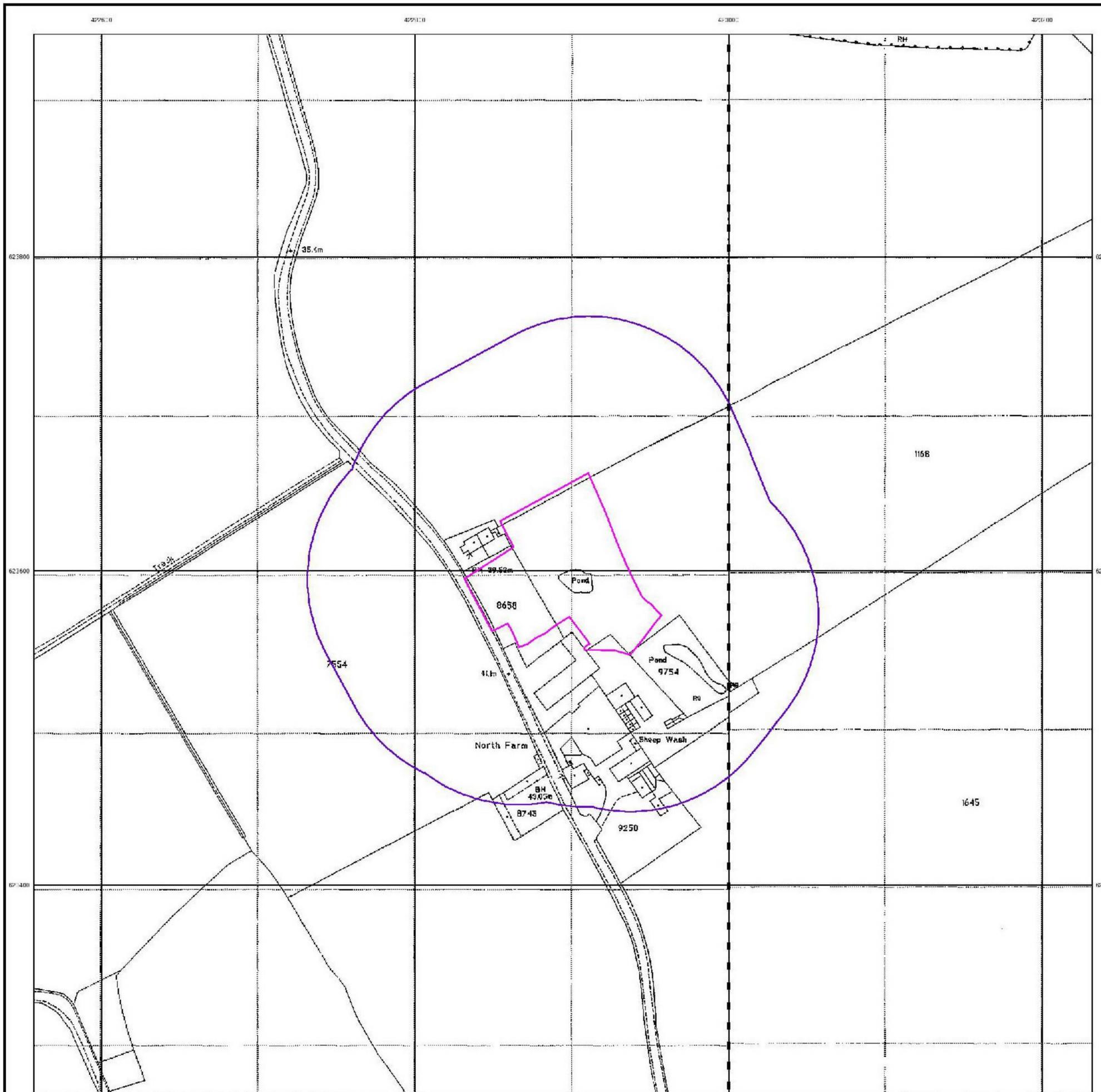
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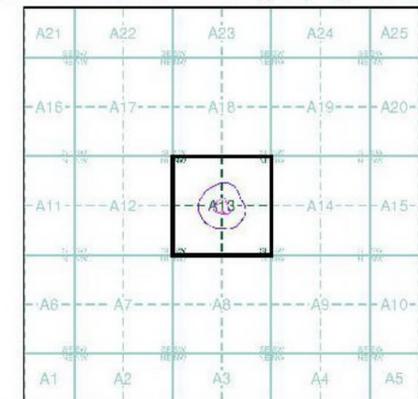
Historical Aerial Photography

Published 1999

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



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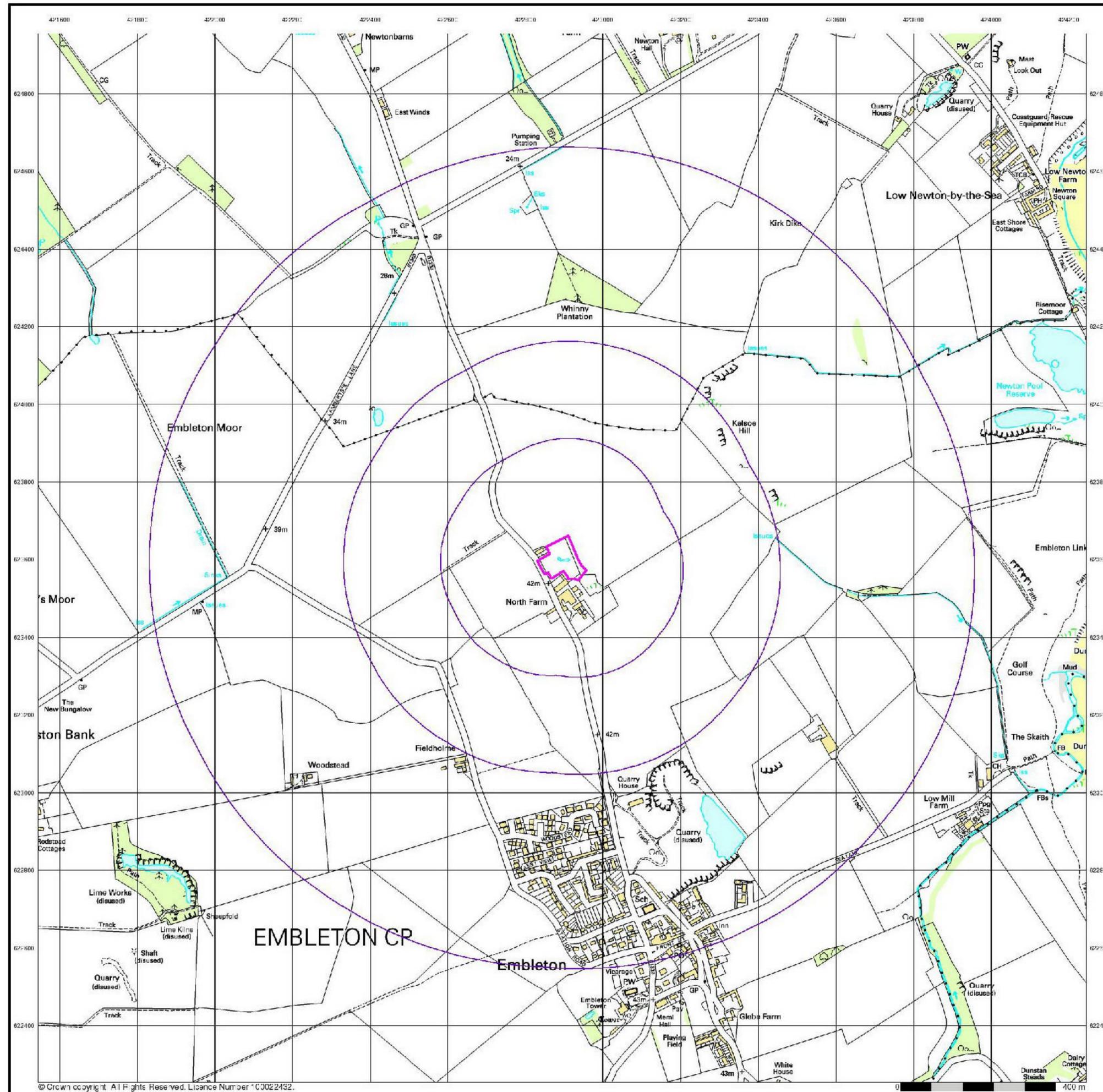
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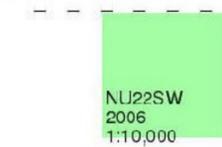
10k Raster Mapping

Published 2006

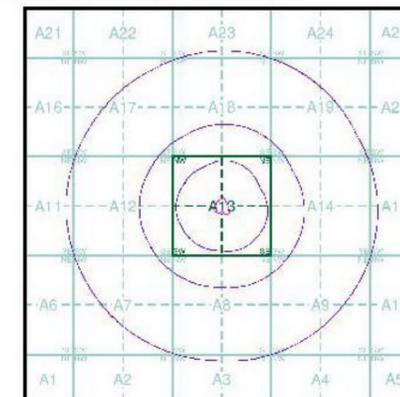
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

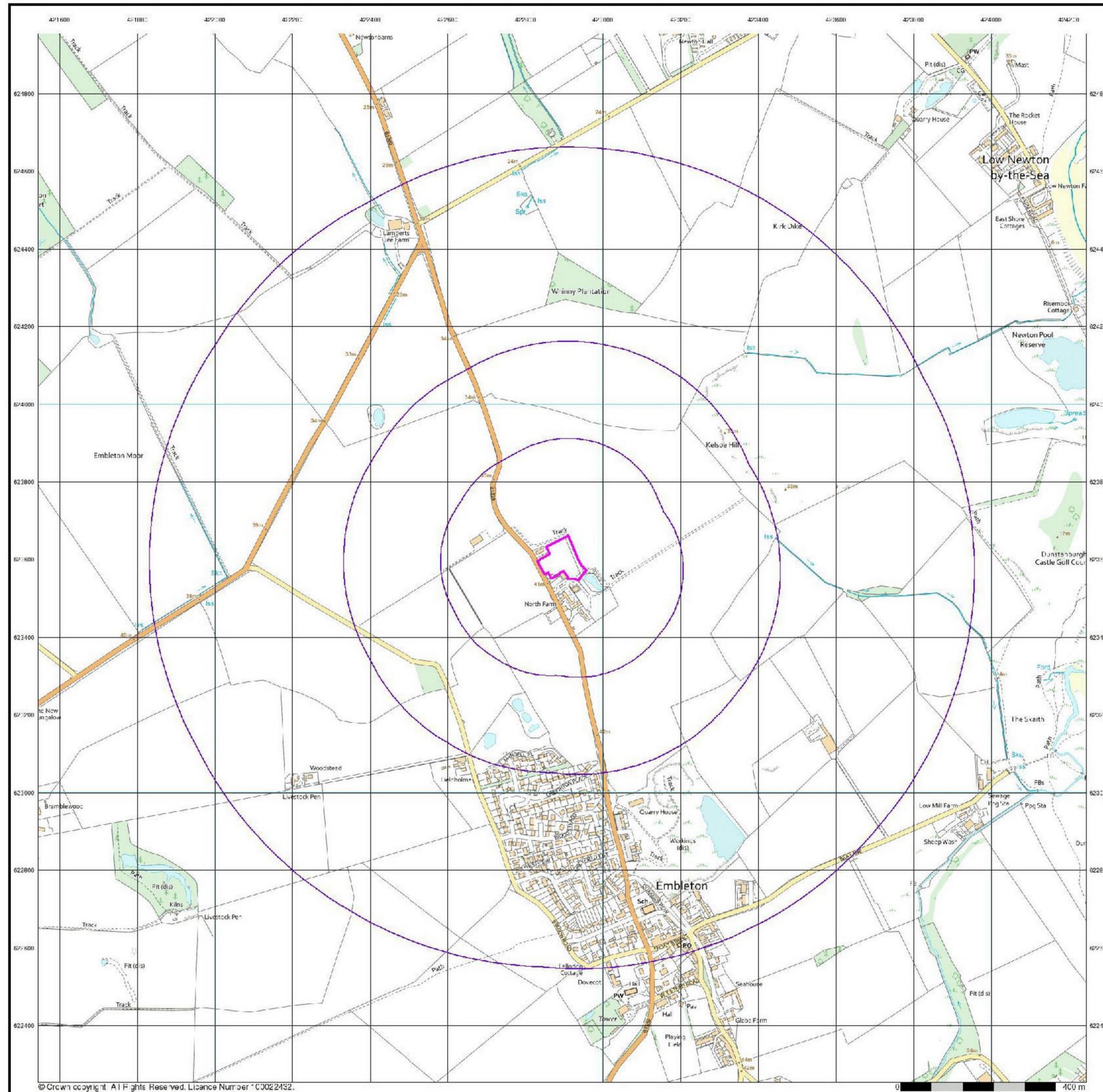
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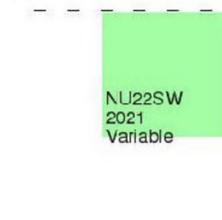
VectorMap Local

Published 2021

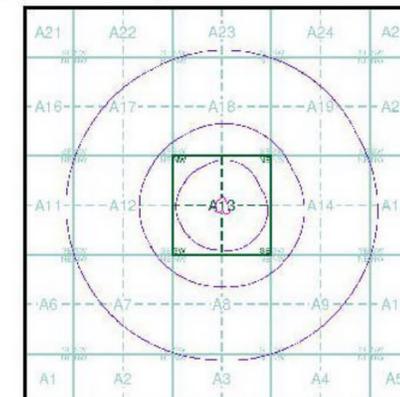
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10,000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 283072514_1_1
 Customer Ref: 210726
 National Grid Reference: 422900, 623600
 Slice: A
 Site Area (Ha): 0.81
 Search Buffer (m): 1000

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APPENDIX II SUPPORTING INFORMATION



Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

283072514_1_1

Customer Reference:

210726

National Grid Reference:

422900, 623600

Slice:

A

Site Area (Ha):

0.81

Search Buffer (m):

1000

Site Details:

Land at North Farm Cottage, North Farm

Embleton

ALNWICK

NE66 3DX

Client Details:

Mr J Roberts

Roberts Environmental Ltd

1 Croft Stairs

Newcastle Upon Tyne

NE1 2HG

| Report Section | Page Number |
|-----------------------|-------------|
| Summary | - |
| Agency & Hydrological | 1 |
| Waste | 8 |
| Hazardous Substances | - |
| Geological | 10 |
| Industrial Land Use | 13 |
| Sensitive Land Use | 14 |
| Data Currency | 15 |
| Data Suppliers | 21 |
| Useful Contacts | 22 |

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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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 | Yes | n/a |
| Contaminated Land Register Entries and Notices | | | | | |
| Discharge Consents | pg 2 | | 2 | | |
| Prosecutions Relating to Controlled Waters | | | n/a | n/a | n/a |
| Enforcement and Prohibition Notices | | | | | |
| Integrated Pollution Controls | | | | | |
| Integrated Pollution Prevention And Control | | | | | |
| Local Authority Integrated Pollution Prevention And Control | | | | | |
| 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 | | | | | |
| Prosecutions Relating to Authorised Processes | | | | | |
| Registered Radioactive Substances | | | | | |
| River Quality | | | | | |
| River Quality Biology Sampling Points | | | | | |
| River Quality Chemistry Sampling Points | | | | | |
| Substantiated Pollution Incident Register | | | | | |
| Water Abstractions | pg 3 | | | | (*1) |
| Water Industry Act Referrals | | | | | |
| Groundwater Vulnerability Map | pg 3 | Yes | n/a | n/a | n/a |
| Groundwater Vulnerability - Soluble Rock Risk | pg 3 | 1 | n/a | n/a | n/a |
| Groundwater Vulnerability - Local Information | | | n/a | n/a | n/a |
| Bedrock Aquifer Designations | pg 3 | Yes | n/a | n/a | n/a |
| Superficial Aquifer Designations | pg 3 | Yes | n/a | n/a | n/a |
| Source Protection Zones | | | | | |
| 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 4 | | | 1 | 28 |

| Data Type | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m (*up to 2000m) |
|---|-------------|---------|-----------|-------------|-----------------------------|
| Waste | | | | | |
| BGS Recorded Landfill Sites | pg 8 | | | | 1 |
| Historical Landfill Sites | pg 8 | | | | 2 |
| Integrated Pollution Control Registered Waste Sites | | | | | |
| Licensed Waste Management Facilities (Landfill Boundaries) | | | | | |
| Licensed Waste Management Facilities (Locations) | | | | | |
| Local Authority Landfill Coverage | pg 8 | 2 | n/a | n/a | n/a |
| Local Authority Recorded Landfill Sites | pg 8 | | | | 1 |
| Potentially Infilled Land (Non-Water) | pg 8 | 1 | | 1 | 1 |
| Potentially Infilled Land (Water) | | | | | |
| Registered Landfill Sites | pg 9 | | | | 1 |
| Registered Waste Transfer Sites | | | | | |
| 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 | | | | | |
| 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 10 | Yes | n/a | n/a | n/a |
| BGS Estimated Soil Chemistry | pg 10 | Yes | | | Yes |
| BGS Recorded Mineral Sites | pg 10 | 1 | | | 6 |
| BGS Urban Soil Chemistry | | | | | |
| BGS Urban Soil Chemistry Averages | | | | | |
| CBSCB Compensation District | | | n/a | n/a | n/a |
| Coal Mining Affected Areas | pg 11 | Yes | n/a | n/a | n/a |
| Mining Instability | pg 11 | Yes | n/a | n/a | n/a |
| Man-Made Mining Cavities | | | | | |
| Natural Cavities | | | | | |
| Non Coal Mining Areas of Great Britain | pg 11 | Yes | | n/a | n/a |
| Potential for Collapsible Ground Stability Hazards | pg 11 | Yes | | n/a | n/a |
| Potential for Compressible Ground Stability Hazards | pg 12 | | Yes | n/a | n/a |
| Potential for Ground Dissolution Stability Hazards | pg 12 | Yes | Yes | n/a | n/a |
| Potential for Landslide Ground Stability Hazards | pg 12 | Yes | | n/a | n/a |
| Potential for Running Sand Ground Stability Hazards | pg 12 | Yes | Yes | n/a | n/a |
| Potential for Shrinking or Swelling Clay Ground Stability Hazards | pg 12 | Yes | Yes | n/a | n/a |
| Radon Potential - Radon Affected Areas | pg 12 | Yes | n/a | n/a | n/a |
| Radon Potential - Radon Protection Measures | pg 12 | Yes | n/a | n/a | n/a |
| Industrial Land Use | | | | | |
| Contemporary Trade Directory Entries | pg 13 | | | | 2 |
| Fuel Station Entries | pg 13 | | | | 1 |
| Points of Interest - Commercial Services | pg 13 | | | | 3 |
| Points of Interest - Education and Health | | | | | |
| Points of Interest - Manufacturing and Production | pg 13 | | | | 4 |
| Points of Interest - Public Infrastructure | pg 13 | | | | 1 |
| Points of Interest - Recreational and Environmental | | | | | |
| Gas Pipelines | | | | | |
| 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 | | | | | |
| Areas of Adopted Green Belt | | | | | |
| Areas of Unadopted Green Belt | | | | | |
| Areas of Outstanding Natural Beauty | pg 14 | 1 | | | |
| Environmentally Sensitive Areas | | | | | |
| Forest Parks | | | | | |
| Local Nature Reserves | | | | | |
| Marine Nature Reserves | | | | | |
| National Nature Reserves | | | | | |
| National Parks | | | | | |
| Nitrate Sensitive Areas | | | | | |
| Nitrate Vulnerable Zones | | | | | |
| 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: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13SE (NE) | 0 | 1 | 422900 623600 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A13SE (W) | 0 | 1 | 422896 623597 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13NE (N) | 0 | 1 | 422896 623650 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13NE (N) | 0 | 1 | 422900 623650 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13SW (SW) | 49 | 1 | 422800 623550 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13NW (NW) | 58 | 1 | 422800 623650 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A13SE (S) | 97 | 1 | 422900 623450 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface | A13NE (NE) | 126 | 1 | 423000 623750 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13SW (S) | 153 | 1 | 422850 623400 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface | A13SW (SW) | 161 | 1 | 422700 623500 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13SW (SW) | 166 | 1 | 422800 623400 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A13SW (S) | 252 | 1 | 422850 623300 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A14SW (E) | 293 | 1 | 423250 623597 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A14SW (E) | 294 | 1 | 423250 623550 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A8NE (S) | 297 | 1 | 422900 623250 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A8NE (S) | 300 | 1 | 422896 623250 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A18SW (N) | 344 | 1 | 422850 624000 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A8NE (S) | 349 | 1 | 422896 623200 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A18SW (N) | 375 | 1 | 422750 624000 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A14SW (E) | 394 | 1 | 423350 623550 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A8NE (S) | 397 | 1 | 422950 623150 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A8NE (S) | 397 | 1 | 422900 623150 |

| 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 | A14SW (E) | 412 | 1 | 423350 623450 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A14NW (NE) | 415 | 1 | 423250 623900 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A18SW (N) | 443 | 1 | 422850 624100 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur | A18SW (N) | 467 | 1 | 422750 624100 |
| | BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level | A14SW (E) | 499 | 1 | 423450 623500 |
| 1 | Discharge Consents Operator: John Manners Limited Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: 5 Holiday Units North Farm, Embleton, Almwick, Northumberland, Ne66 3dx Authority: Environment Agency, North East Region Catchment Area: Embleton Burn Reference: Npswqd008020 Permit Version: 2 Effective Date: 26th July 2012 Issued Date: 26th July 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters Via A Soakaway 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 | A13SE (E) | 6 | 2 | 422962 623570 |
| 1 | Discharge Consents Operator: John Manners Limited Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: 5 Holiday Units North Farm, Embleton, Almwick, Northumberland, Ne66 3dx Authority: Environment Agency, North East Region Catchment Area: Embleton Burn Reference: Npswqd008020 Permit Version: 1 Effective Date: 31st July 2009 Issued Date: 3rd August 2009 Revocation Date: 25th July 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters Via A Soakaway 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 | A13SE (E) | 6 | 2 | 422962 623570 |
| 2 | Local Authority Pollution Prevention and Controls Name: J R Grieves & Co (Embleton) Location: Embleton Garage, Embleton, ALNWICK, Northumberland, NE66 3DW Authority: Northumberland Council, Environmental Health Department Permit Reference: EP4/92B Dated: 20th May 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input Status: Site Closed Positional Accuracy: Manually positioned to the address or location | A8SE (S) | 822 | 3 | 423051 622733 |
| | Nearest Surface Water Feature | A13SE (SE) | 8 | - | 422955 623556 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|------------------|
| | Water Abstractions Operator: Dunstanburgh Castle Golf Club Licence Number: 1/22/01/073 Permit Version: 100 Location: Embleton Burn Authority: Environment Agency, North East Region Abstraction: Golf Courses: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 14 Yearly Rate (m3): 1182 Details: Dunstanburgh Castle Golf Course Authorised Start: 01 May Authorised End: 31 October Permit Start Date: 7th June 1971 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m | A10NW (SE) | 1270 | 2 | 424100 623020 |
| | Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: <300 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: 3-10m Superficial Recharge: Medium | A13SW (SW) | 0 | 4 | 422881 623585 |
| | Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - Low Vulnerability Combined Vulnerability: Low Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: <300 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: 3-10m Superficial Recharge: Medium | A13SE (W) | 0 | 4 | 422896 623597 |
| | Groundwater Vulnerability - Soluble Rock Risk Classification: Significant Risk - Low Possibility | A13SE (W) | 0 | 4 | 422896 623597 |
| | Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A | A13SE (W) | 0 | 4 | 422896 623597 |
| | Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated | A13SW (SW) | 0 | 4 | 422881 623585 |
| | 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 | | | | |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 3 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 220.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A14NW (E) | 495 | 5 | 423444 623654 |
| 4 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SW (NE) | 659 | 5 | 423371 624133 |
| 5 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SW (NE) | 660 | 5 | 423375 624131 |
| 6 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SW (NE) | 663 | 5 | 423378 624131 |
| 7 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SW (NE) | 663 | 5 | 423377 624133 |
| 8 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A14SE (E) | 664 | 5 | 423618 623523 |
| 9 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 224.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SW (NE) | 666 | 5 | 423381 624132 |
| 10 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 89.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A14SE (E) | 675 | 5 | 423629 623518 |
| 11 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 276.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A17SE (NW) | 725 | 5 | 422429 624219 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
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| 12 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 16.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 2 | A14SE (E) | 762 | 5 | 423716 623506 |
| 13 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A14SE (E) | 762 | 5 | 423716 623506 |
| 14 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 323.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A14SE (E) | 779 | 5 | 423733 623506 |
| 15 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SE (NE) | 793 | 5 | 423585 624078 |
| 16 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 688.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A19SE (NE) | 795 | 5 | 423588 624078 |
| 17 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 155.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12SW (W) | 799 | 5 | 422034 623552 |
| 18 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12NW (W) | 829 | 5 | 422003 623616 |
| 19 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 206.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12NW (W) | 832 | 5 | 422000 623621 |
| 20 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 28.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A18NW (N) | 852 | 5 | 422805 624507 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 21 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A18NW (N) | 854 | 5 | 422829 624512 |
| 22 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12SW (W) | 872 | 5 | 421966 623487 |
| 23 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 174.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12SW (W) | 873 | 5 | 421963 623507 |
| 24 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12SW (W) | 873 | 5 | 421963 623507 |
| 25 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12SW (W) | 874 | 5 | 421962 623505 |
| 26 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A18NW (N) | 876 | 5 | 422819 624533 |
| 27 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 79.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A18NW (N) | 879 | 5 | 422818 624536 |
| 28 | OS Water Network Lines Watercourse Form: Lake Watercourse Length: 18.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A17NE (NW) | 933 | 5 | 422426 624461 |
| 29 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 269.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A17NE (NW) | 946 | 5 | 422431 624477 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 30 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 408.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A12NW (W) | 947 | 5 | 421909 623806 |
| 31 | OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 123.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Berwick to Alnmouth Coast Primacy: 1 | A18NW (N) | 955 | 5 | 422786 624608 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|------------------|
| 32 | BGS Recorded Landfill Sites Site Name: Embleton Quarry Location: Embleton, ALNWICK, Northumberland Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good | A8NE (SE) | 512 | - | 423216 623118 |
| 33 | Historical Landfill Sites Licence Holder: Northumberland County Council Location: Embleton, Northumberland Name: Disused Quarry East of Embleton Operator Location: Council Offices, 34 Greenbatt, Alnwick Boundary Accuracy: As Supplied Provider Reference: EAHLD06381 First Input Date: 31st December 1963 Last Input Date: 1st May 1982 Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste, and Liquid Sludge EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2900/0105 BGS Ref: 1205 Other Ref: NBL/R005 | A8NE (SE) | 514 | 2 | 423219 623118 |
| 34 | Historical Landfill Sites Licence Holder: Not Supplied Location: High Newton-by-the-Sea, Northumberland Name: Newton Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06456 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2900/0136 BGS Ref: Not Supplied Other Ref: PA 007 | A17NE (NW) | 878 | 2 | 422478 624426 |
| | Local Authority Landfill Coverage Name: Northumberland County Council - Has supplied landfill data | | 0 | 7 | 422896 623597 |
| | Local Authority Landfill Coverage Name: Alnwick District Council - Has no landfill data to supply | | 0 | 6 | 422896 623597 |
| 35 | Local Authority Recorded Landfill Sites Location: Newton, Newton By-The-Sea Reference: PA7 Authority: Northumberland County Council (now part of Northumberland Council) Last Reported Status: Unknown Types of Waste: Household Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable | A17NE (NW) | 934 | 7 | 422500 624500 |
| 36 | Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1978 | A13NW (NW) | 0 | - | 422877 623608 |
| 37 | Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1978 | A8NW (S) | 419 | - | 422886 623131 |
| 38 | Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1978 | A18NW (N) | 855 | - | 422807 624511 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|------------------|
| 39 | <p>Registered Landfill Sites</p> <p>Licence Holder: Northumberland C.C. Licence Reference: R 5 Site Location: Embleton Landfill, Embleton, Alnwick, Northumberland Licence Easting: 423200 Licence Northing: 622900 Operator Location: County Hall, MORPETH, Northumberland, NE61 2EF Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill 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: Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: Not Supplied Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes House. + Com. Untreated Waste Ind. Non-Haz. Inert, Non-Flammable Ind. Non-Haz. Potentially Combustible</p> | A8SE (SE) | 699 | 2 | 423200 622900 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|---------------|
| | BGS 1:625,000 Solid Geology Description: Yoredale Group | A13SE (W) | 0 | 1 | 422896 623597 |
| | BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg | A13SE (W) | 0 | 1 | 422896 623597 |
| | BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment 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 mg/kg | A15SW (E) | 980 | 1 | 423931 623463 |
| 40 | BGS Recorded Mineral Sites Site Name: North Farm Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112494 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Four Fathom Limestone Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m | A13SE (NE) | 0 | 1 | 422902 623600 |
| 41 | BGS Recorded Mineral Sites Site Name: Embleton Moor Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112477 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Three Yard Limestone Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m | A17SE (NW) | 567 | 1 | 422412 623986 |
| 42 | BGS Recorded Mineral Sites Site Name: Kelsoe Hill Location: Low Newton By The Sea, Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112485 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Alston Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m | A18SW (NW) | 598 | 1 | 422636 624193 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 43 | BGS Recorded Mineral Sites Site Name: Embleton Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 5276 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous, Permian Geology: Great Whin Sill Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m | A8NE (S) | 638 | 1 | 423115 622935 |
| 44 | BGS Recorded Mineral Sites Site Name: Embleton Quarry Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112510 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Great Limestone Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m | A9NW (SE) | 710 | 1 | 423474 623083 |
| 45 | BGS Recorded Mineral Sites Site Name: Embleton Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112513 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Alston Formation Commodity: Mineral Positional Accuracy: Located by supplier to within 10m | A9NE (SE) | 738 | 1 | 423573 623166 |
| 46 | BGS Recorded Mineral Sites Site Name: Whinny Plantation Location: Embleton, Alnwick, Northumberland Source: British Geological Survey, National Geoscience Information Service Reference: 112491 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Alston Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m | A18NW (N) | 852 | 1 | 422800 624506 |
| | BGS Measured Urban Soil Chemistry No data available | | | | |
| | BGS Urban Soil Chemistry Averages No data available | | | | |
| | Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report. | A13SE (W) | 0 | 8 | 422896 623597 |
| | Mining Instability Mining Evidence: Conclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied | A13SE (W) | 0 | - | 422896 623597 |
| | Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 230 | 1 | 422650 623448 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|---------------|
| | Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 230 | 1 | 422650 623448 |
| | Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 0 | 1 | 422881 623585 |
| | Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service | A13NW (NW) | 0 | 1 | 422874 623636 |
| | Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SE (E) | 209 | 1 | 423165 623558 |
| | Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 0 | 1 | 422881 623585 |
| | Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SE (E) | 209 | 1 | 423165 623558 |
| | Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 230 | 1 | 422650 623448 |
| | Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 0 | 1 | 422881 623585 |
| | Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service | A13SE (E) | 209 | 1 | 423165 623558 |
| | Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 230 | 1 | 422650 623448 |
| | Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |
| | Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service | A13SE (W) | 0 | 1 | 422896 623597 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|------------------|
| 47 | Contemporary Trade Directory Entries Name: J R Grieves & Co Embleton Ltd Location: Embleton Garage, Embleton, Alnwick, Northumberland, NE66 3XR Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address | A8SE (S) | 821 | - | 423051 622734 |
| 47 | Contemporary Trade Directory Entries Name: J R Grieves Location: Embleton, Alnwick, Northumberland, NE66 3XS Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality | A8SE (S) | 842 | - | 423043 622712 |
| 48 | Fuel Station Entries Name: Embleton Service Station Location: Seahouses Road, Embleton, Alnwick, Northumberland, NE66 3XS Brand: Gulf Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the address or location | A8SE (S) | 817 | - | 423051 622738 |
| 49 | Points of Interest - Commercial Services Name: J R Grieves & Co (Embleton) Ltd Location: Embleton Garage, Embleton, Alnwick, NE66 3XR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location | A8SE (S) | 821 | 9 | 423051 622734 |
| 49 | Points of Interest - Commercial Services Name: J R Grieves & Co Embleton Ltd Location: Embleton Garage, Embleton, Alnwick, NE66 3XR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location | A8SE (S) | 822 | 9 | 423050 622733 |
| 50 | Points of Interest - Commercial Services Name: Gedd Shell Pest Control Services Location: 41 Greyfield Estate, Embleton, Alnwick, NE66 3XU Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location | A8SE (S) | 845 | 9 | 422929 622702 |
| 51 | Points of Interest - Manufacturing and Production Name: Quarry (Disused) Location: NE66 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location | A8NE (SE) | 550 | 9 | 423185 623056 |
| 52 | Points of Interest - Manufacturing and Production Name: Quarry (Disused) Location: NE66 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location | A8SE (SE) | 729 | 9 | 423223 622877 |
| 52 | Points of Interest - Manufacturing and Production Name: Quarry (Disused) Location: NE66 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location | A8SE (SE) | 730 | 9 | 423226 622877 |
| 53 | Points of Interest - Manufacturing and Production Name: Sheep Pen and Dip Location: NE66 Category: Farming Class Code: Sheep Dips and Washes Positional Accuracy: Positioned to address or location | A7NW (SW) | 835 | 9 | 422218 623015 |
| 54 | Points of Interest - Public Infrastructure Name: Embleton Service Station Location: Seahouses Road, Embleton, Alnwick, NE66 3XS Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location | A8SE (S) | 817 | 9 | 423051 622738 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 55 | Areas of Outstanding Natural Beauty Name: Northumberland Coast Multiple Areas: Y Total Area (m2): 133352524.89558241 Designation Date: 30th March 1958 Source: Natural England | A13SE (W) | 0 | 10 | 422896 623597 |

| Agency & Hydrological | Version | Update Cycle |
|---|--|--|
| Contaminated Land Register Entries and Notices Alnwick District Council (now part of Northumberland Council) - Environmental Health Department Northumberland Council - Environmental Health Department Environment Agency - Head Office Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department | December 2019 January 2020 June 2020 September 2017 | Annually Annually |
| Discharge Consents Environment Agency - North East Region | April 2021 | Quarterly |
| Enforcement and Prohibition Notices Environment Agency - North East Region | March 2013 | |
| Integrated Pollution Controls Environment Agency - North East Region | January 2009 | |
| Integrated Pollution Prevention And Control Environment Agency - North East Region | April 2021 | Quarterly |
| Local Authority Integrated Pollution Prevention And Control Alnwick District Council (now part of Northumberland Council) - Environmental Health Department Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department Northumberland Council - Environmental Health Department | April 2009 March 2005 May 2014 | Not Applicable Not Applicable Variable |
| Local Authority Pollution Prevention and Controls Alnwick District Council (now part of Northumberland Council) - Environmental Health Department Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department Northumberland Council - Environmental Health Department | April 2009 March 2005 May 2014 | Not Applicable Not Applicable Annually |
| Local Authority Pollution Prevention and Control Enforcements Alnwick District Council (now part of Northumberland Council) - Environmental Health Department Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department Northumberland Council - Environmental Health Department | April 2009 March 2005 May 2014 | Not Applicable Not Applicable Variable |
| Nearest Surface Water Feature Ordnance Survey | June 2021 | |
| Pollution Incidents to Controlled Waters Environment Agency - North East Region | December 1998 | |
| Prosecutions Relating to Authorised Processes Environment Agency - North East Region | July 2015 | |
| Prosecutions Relating to Controlled Waters Environment Agency - North East Region | March 2013 | |
| Registered Radioactive Substances Environment Agency - North East Region | June 2016 | Annually |
| River Quality Environment Agency - Head Office | November 2001 | Not Applicable |
| River Quality Biology Sampling Points Environment Agency - Head Office | April 2012 | Annually |
| River Quality Chemistry Sampling Points Environment Agency - Head Office | April 2012 | Annually |
| Substantiated Pollution Incident Register Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | April 2021 April 2021 | Quarterly Quarterly |
| Water Abstractions Environment Agency - North East Region | April 2021 | Quarterly |

| Agency & Hydrological | Version | Update Cycle |
|---|---------------|--------------|
| Water Industry Act Referrals Environment Agency - North East Region | October 2017 | Quarterly |
| Groundwater Vulnerability Map Environment Agency - Head Office | June 2018 | As notified |
| Groundwater Vulnerability - Soluble Rock Risk Environment Agency - Head Office | June 2018 | As notified |
| Bedrock Aquifer Designations Environment Agency - Head Office | January 2018 | Annually |
| Superficial Aquifer Designations Environment Agency - Head Office | January 2018 | Annually |
| Source Protection Zones Environment Agency - Head Office | May 2021 | Bi-Annually |
| Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office | March 2021 | Quarterly |
| Flooding from Rivers or Sea without Defences Environment Agency - Head Office | March 2021 | Quarterly |
| Areas Benefiting from Flood Defences Environment Agency - Head Office | March 2021 | Quarterly |
| Flood Water Storage Areas Environment Agency - Head Office | March 2021 | Quarterly |
| Flood Defences Environment Agency - Head Office | March 2021 | Quarterly |
| OS Water Network Lines Ordnance Survey | July 2021 | 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 | Annually |

| Waste | Version | Update Cycle |
|--|---|--|
| BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service | November 2002 | Not Applicable |
| Historical Landfill Sites Environment Agency - Head Office | May 2021 | Quarterly |
| Integrated Pollution Control Registered Waste Sites Environment Agency - North East Region | January 2009 | Not Applicable |
| Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | April 2021 April 2021 | Quarterly Quarterly |
| Licensed Waste Management Facilities (Locations) Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | April 2021 April 2021 | Quarterly Quarterly |
| Local Authority Landfill Coverage Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department Northumberland County Council (now part of Northumberland Council) | February 2003 February 2003 February 2003 | Not Applicable Not Applicable Not Applicable |
| Local Authority Recorded Landfill Sites Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Environmental Health Department Northumberland County Council (now part of Northumberland Council) | October 2018 October 2018 October 2018 | |
| Potentially Infilled Land (Non-Water) Landmark Information Group Limited | December 1999 | Not Applicable |
| Potentially Infilled Land (Water) Landmark Information Group Limited | December 1999 | |
| Registered Landfill Sites Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | March 2006 March 2006 | Not Applicable Not Applicable |
| Registered Waste Transfer Sites Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | April 2018 April 2018 | |
| Registered Waste Treatment or Disposal Sites Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area | June 2015 June 2015 | |

| Hazardous Substances | Version | Update Cycle |
|---|---|---|
| Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive | April 2018 | Bi-Annually |
| Explosive Sites Health and Safety Executive | March 2017 | Annually |
| Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive | August 2001 | |
| Planning Hazardous Substance Enforcements Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Planning Department Northumberland County Council (now part of Northumberland Council) - Minerals Waste and Development Control Northumberland Council - Planning Department | February 2009 March 2009 October 2008 October 2015 | Not Applicable Not Applicable Annual Rolling Update Variable |
| Planning Hazardous Substance Consents Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Planning Department Northumberland County Council (now part of Northumberland Council) - Minerals Waste and Development Control Northumberland Council - Planning Department | February 2009 March 2009 October 2008 October 2015 | Not Applicable Not Applicable Annual Rolling Update Variable |
| Geological | Version | Update Cycle |
| BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service | January 2009 | Not Applicable |
| BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service | December 2015 | Annually |
| BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service | May 2021 | Bi-Annually |
| CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) | August 2011 | As notified |
| Coal Mining Affected Areas The Coal Authority - Property Searches | March 2014 | Annual Rolling Update |
| 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 | Annually |
| Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service | January 2019 | Annually |
| Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service | January 2019 | Annually |
| Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service | January 2019 | Annually |
| Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service | January 2019 | Annually |
| Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service | January 2019 | Annually |
| Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service | July 2011 | Annually |
| Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service | July 2011 | Annually |

| Industrial Land Use | Version | Update Cycle |
|--|-----------|--------------|
| Contemporary Trade Directory Entries Thomson Directories | July 2021 | Quarterly |
| Fuel Station Entries Catalist Ltd - Experian | June 2021 | Quarterly |
| Gas Pipelines National Grid | May 2021 | Annually |
| Points of Interest - Commercial Services PointX | June 2021 | Quarterly |
| Points of Interest - Education and Health PointX | June 2021 | Quarterly |
| Points of Interest - Manufacturing and Production PointX | June 2021 | Quarterly |
| Points of Interest - Public Infrastructure PointX | June 2021 | Quarterly |
| Points of Interest - Recreational and Environmental PointX | June 2021 | Quarterly |
| Underground Electrical Cables National Grid | May 2021 | Annually |

| Sensitive Land Use | Version | Update Cycle |
|--|--|-------------------------------------|
| Ancient Woodland Natural England | February 2021 | Bi-Annually |
| Areas of Adopted Green Belt Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Planning Department Northumberland Council - Planning Department | October 2020 October 2020 October 2020 | Quarterly Quarterly Quarterly |
| Areas of Unadopted Green Belt Alnwick District Council (now part of Northumberland Council) Berwick-upon-Tweed Borough Council (now part of Northumberland Council) - Planning Department Northumberland Council - Planning Department | October 2020 October 2020 October 2020 | Quarterly Quarterly Quarterly |
| Areas of Outstanding Natural Beauty Natural England | January 2021 | Bi-Annually |
| Environmentally Sensitive Areas Natural England | January 2017 | |
| Forest Parks Forestry Commission | April 1997 | Not Applicable |
| Local Nature Reserves Natural England | February 2021 | Bi-Annually |
| Marine Nature Reserves Natural England | July 2019 | Bi-Annually |
| National Nature Reserves Natural England | January 2021 | Bi-Annually |
| National Parks Natural England | February 2018 | Bi-Annually |
| Nitrate Sensitive Areas Natural England | April 2016 | Not Applicable |
| Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA) Environment Agency - Head Office | April 2016 June 2017 | Bi-Annually |
| Ramsar Sites Natural England | August 2020 | Bi-Annually |
| Sites of Special Scientific Interest Natural England | February 2021 | Bi-Annually |
| Special Areas of Conservation NatureScot Natural England | August 2020 July 2020 | Bi-Annually Bi-Annually |
| Special Protection Areas Natural England | February 2021 | 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 <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small> |
| Centre for Ecology and Hydrology |  Centre for Ecology & Hydrology <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small> |
| 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 | Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk |
| 2 | Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY | Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk |
| 3 | Northumberland Council - Environmental Health Department County Hall, Morpeth, Northumberland, NE61 2EF | Telephone: 0845 600 6400 Email: ask@northumberland.gov.uk Website: www.northumberland.gov.uk |
| 4 | Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD | Telephone: 01454 624400 Fax: 01454 624409 |
| 5 | Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS | Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk |
| 6 | Alnwick District Council (now part of Northumberland Council) County Hall, Morpeth, Northumberland, NE61 2EF | Telephone: 0845 600 6400 Website: www.northumberland.gov.uk |
| 7 | Northumberland County Council (now part of Northumberland Council) County Hall, Morpeth, Northumberland, NE61 2EF | Telephone: 01670 533000 Fax: 01670 534160 Website: www.northumberland.gov.uk |
| 8 | The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG | Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com |
| 9 | PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY | Website: www.pointx.co.uk |
| 10 | Natural England County Hall, Spetchley Road, Worcester, WR5 2NP | Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk |
| 11 | NatureScot Great Glen House, Leachkin Road, Inverness, IV3 8NW | Telephone: 01463 725000 Email: enquiries@nature.scot Website: www.nature.scot |
| - | Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ | Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org |
| - | Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD | Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk |

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

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 422868,623581



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.

-  military
-  industry
-  UXO find
-  transport
-  dock
-  Luftwaffe targets
-  utilities
-  Bombing decoy
-  other

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

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

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

If both the map and other research confirms 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.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

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The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

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It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

APPENDIX III DEFINITIONS AND RESERVATIONS

For the avoidance of doubt, Roberts Environmental has prepared the following alphabetical list of definitions and reservations to aid the client in understanding the content of our advice and or written reports(s):

| | |
|---------------------------|--|
| Accuracy | Level of agreement between true value and observed value. |
| ACM's | Asbestos Containing Materials |
| Conceptual Exposure model | Textual and or schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the base of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. Note 1: The conceptual exposure model is initially derived from the information obtained by the preliminary investigation. This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of the field investigation can provide additional data that can be used to further refine the conceptual model. |
| Contamination | Presence of a substance which is in, on or under land, and which has <u>the potential</u> to cause significant harm or to cause significant pollution of controlled water. Note 1: There is no assumption in this definition that harm results from the presence of the contamination. Note 2: Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Note 3: Contamination may relate to soils, groundwater or ground gas. |
| Controlled water | Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three mile limit of territorial waters. Note 1: See Section 104 of The Water Resources Act 1991. |
| Enquiries | Any enquiries undertaken by Roberts Environmental of local authorities and statutory undertakers are made verbally in respect of environmental issues. Local searches are not undertaken and no responsibility is accepted for any inaccurate information provided. |
| Harm | It is further assumed unless otherwise stated that all necessary licences, permits etc. either run with the property or are transferable to a new occupier as appropriate. Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case humans, including property. |
| Hazard | Inherently dangerous quality of a substance, procedure or event. |
| Pathway | Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor. |
| Precision | Level of agreement within a series of measurements of a parameter. |
| Receptor | Persons, living organisms, ecological systems, controlled water, atmosphere, structures and utilities that could be adversely affected by the contaminant(s). |
| Risk | Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor. |
| Risk assessment | Process of establishing, to the extent possible, the existence, nature and significance of risk. |
| Sampling | Methods and techniques used to obtain a representative sample of the material under investigation. |
| Soil | Upper layer of the earth's crust composed of mineral parts, organic substance, water, air and living matter. Note 1: In accordance with BS 10175:2001 the term soil has the meaning ascribed to it through general use in civil engineering and includes topsoil and subsoil; deposits such as clays, silt, sand, gravel, cobbles, boulders and organic deposits such as peat; and material of natural or human origin (e.g. fills and deposited wastes). The term embraces |

| | |
|-------------|---|
| | all components of soil, including mineral matter, organic matter, soil gas and moisture, and living organisms. |
| Source | Location from which contamination is, or was, derived. Note 1: This could be the location of the highest soil or groundwater concentration of the contaminant(s). |
| Uncertainty | Parameter, associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurement. |

Risk Classification

In line with current UK guidance, the Environmental Assessment has been undertaken using a risk based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-receptor' scenario. In consideration of the information gathered an overall risk rating has been provided for the site based on the following definitions:

Low Risk

The site is considered suitable for present use and environmental setting. It is unlikely that any issues will arise as a liability/cost for the freehold owner of the site.

Medium Risk

The site may not be suitable for present use and environmental setting. Contaminants are probably or certainly present and are likely to have an unacceptable impact on the identified receptors. It is possible that the issue(s) could arise as a liability/cost for the freehold owner of the site. Further work is usually required to clarify the risk.

High Risk

The site is not suitable for present use and environmental setting. Contaminants are probably or certainly present and are very likely to have an unacceptable impact on the identified receptors. It is likely that the issue(s) will arise as a liability/cost for the freehold owner of the site. Further work is urgently needed.