



COAL MINING GROUND INVESTIGATION & RISK ASSESSMENT

Land off Top Road,
Summerhill,
Wrexham,
LL11 4SP

Prepared for:
Macbryde Homes



Report Ref: 11-780-r2
Date Issued: July 2017

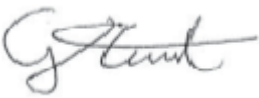
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PROJECT NUMBER	11-780
IMS Template Reference: QR016-1 – September 2016	

EXECUTIVE SUMMARY

Site Address	Land off Top Road, Summerhill, Wrexham, LL11 4SP
Grid Reference	E331060, N353360
Site Area	5.5 Hectares
Current Site Use	The subject site is roughly rectangular in shape located to the west of Top Road & Summerhill Road. The site currently comprises open grassed land, thought to have been utilised for agriculture pastoral grazing. There are three buildings located in the centre of the site at the end of a private driveway leading from Summerhill Road along the eastern boundary.
Proposed Development	E3P understands that Macbryde Homes are considering the proposed acquisition and future redevelopment of a parcel of land off Top Road in Summerhill, Wrexham for low rise residential housing with associated adopted estate roads and utility infrastructure.
Geological Setting	The 1:10,000 geological mapping for the area identifies the presence of the Lower Stinking coal seam located circa 1km to the west of the site dipping in an easterly direction with no dip indicated. There are no coal seams outcropping within the site or in immediate proximity to the site. Four mine shafts are indicated in close proximity to the site in the same locations as indicated by the Coal Authority.
Coal Authority Information	The Coal Authority Mining Report (Ref: 51001469126001) dated May 2017 has been obtained for the subject site by E3P. This report confirmed: ▪ <i>Past underground coal mining has been recorded nine times beneath the site, the shallowest of which was at 31m with an extraction thickness of 180cm;</i> ▪ <i>4 No. known coal mine entries are located within, or within 20 metres of the site boundary;</i> ▪ <i>There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property;</i> ▪ <i>The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.</i> ▪ <i>No faults, fissures or breaklines recorded; and</i> ▪ <i>The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.</i>
Scope of Works	 3 x Rotary Open Holes to investigate the potential for shallow mine workings  3 x mechanically excavated Trial Trenches to investigate the disused tunnel; and,  2 x mechanically excavated Trial Trenches to investigate the mapped mine shafts.
Ground Investigation Findings	During the intrusive Ground Investigation, there was evidence of broken ground or workings of a circa 0.20m thickness in the northern sector of the site with a circa 0.40m thick intact coal seam present circa one metre deeper in both RB101 and RB103. No evidence of coal or workings were recorded within RB102 located further south towards the central site sector.
Conclusion	A detailed coal mining investigation has been completed on the site which has confirmed that the site is not affected by shallow coal workings.

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Appendix IV Historical Maps

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Appendix VI Coal Authority Information

1. INTRODUCTION

1.1 Background

E3P Ltd have been commissioned by Macbryde Homes Ltd to undertake a Coal Mining Risk Assessment for a parcel of agricultural land to the west of Top Road, Wrexham.

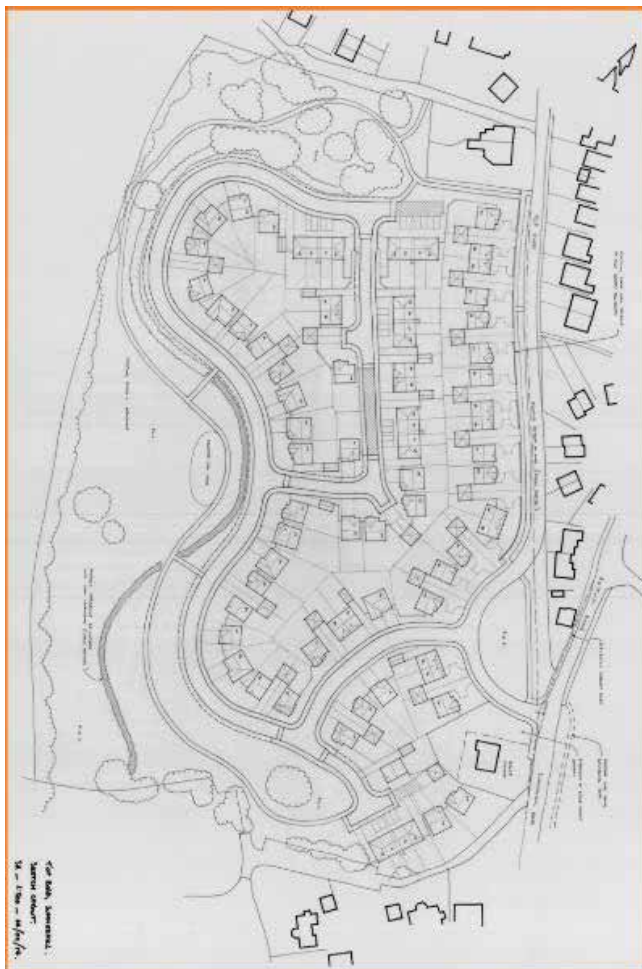
This Risk Assessment comprises a desk-based review of all available information on the coal mining issues which are relevant to the application site deemed to be located within a 'High Risk' area including information on the intrusive coal mining investigation.

1.2 Proposed Development

E3P understands that Macbryde Homes are considering the proposed acquisition and future redevelopment of a parcel of land off Top Road in Summerhill, Wrexham for low rise residential housing with associated adopted estate roads and utility infrastructure.

A snapshot of the proposed development layout is indicated in Figure 1.1 overleaf:

Figure 1.1 Snapshot of Proposed Layout



1.3 Objectives

The objectives of the Geo-Environmental Investigation are to:

-  Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
-  Reporting the findings of the intrusive Ground Investigation;
-  Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and,
-  Demonstrating to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

1.4 Limitations

The limitations of this report are presented in Appendix I.

1.5 Confidentiality

E3P has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

2. SITE SETTING

2.1 Site Details

Site Address	Land off Top Road, Summerhill, WREXHAM, LL11 4SP
National Grid Reference	E331060, N353360
Site Area	5.5 Hectares

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 11-780-001.

2.2 Current Site Use

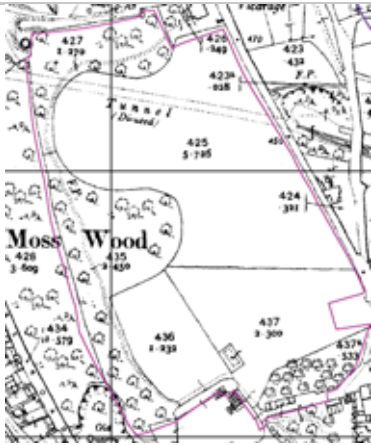
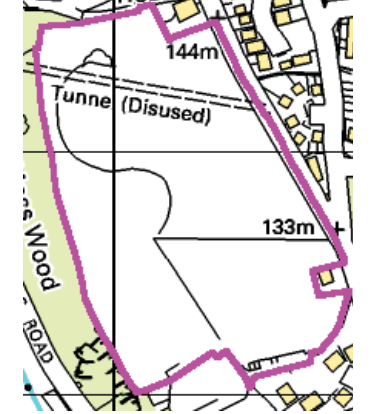
SITE DESCRIPTION	
Occupancy/use	The subject site is roughly rectangular in shape located to the west of Top Road & Summerhill Road. The site currently comprises open grassed land, thought to have been utilised for agriculture or pastoral grazing. There are three buildings located in the centre of the site at the end of a private driveway leading from Summerhill Road along the eastern boundary.
Structures	The site is predominantly agricultural land with the only structures present appearing to be a for agricultural and residential use. Two of the buildings are rectangular in shape, running from north to south and the third is a smaller square shaped building adjacent to the south. The buildings to the east is utilised for stables, the small square one to the south is for hay storage and the further rectangular building is for day use only by the stable operators.
Access	Vehicular access can be made from the farm track which leads from Summerhill Road to the buildings in the centre of the site. Access to the fields can be made through farm gates off the farm track.
Slope	The slope is variable across the site, however there is a general slope from north west to south east with a topographical difference of circa 24m. The adjacent land to the north is topographically higher in elevation than the subject site by circa 2.00m bgl.
Retaining structures	There is an existing stone retaining wall running along the northern boundary of the site, retaining the adjacent land due to the topographical increase here.
Surface Cover (%)	Buildings: 5%
	Hardstand: 5%
	Soft cover: 90%
Trees	The site is predominantly made up of agricultural fields divided by fences. There is a hedgerow running from the western boundary to the buildings in the centre of the site and a series of sporadic semi-mature trees are along the northern and southern boundaries. The western boundary runs along the tree line of Moss Wood; however, these mature trees are not within the site boundary.



3. SITE HISTORY

3.1 On-Site Historical Development

A review of historical mapping pertinent to the mining history of site is summarised in Table 3.1 below. In addition, historical site features are presented on Drawing No 11-780-003 in Appendix III.

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1873 1:2500	The site is shown to comprise undeveloped agricultural land, containing a series of field boundaries and sporadic trees spread across the site. A tunnel is recorded to run under the northern sector of the site running from east to west, connecting the railway on either side of the site.	
1912 1:2500	Minimal change other than the field boundaries have changed, the rectangle is marked with a line indicating that it could be a small pond and the tunnel is now marked as being disused.	
2000 1:10,000	There are no significant changes to the subject site.	

3.2 Planning History

E3P has undertaken a detailed search of on-line planning records held by Wrexham County Borough Council which has identified that there is no planning application information pertinent to the site or the immediate surrounding area. Planning applications in vicinity of the site relate to extensions and demolition activities.

E3P has also included a search in the vicinity of the marked disused tunnel for any information on its purpose and link to coal mining in the area, however no information could be obtained.

4. SITE GEOLOGY

4.1 Geological Mapping

The British Geological Survey (BGS) map for the site, (1:50,000, Solid & Drift edition) and online records indicates the site is underlain by the geological sequence presented in Table 4.1.

Table 4.1 *Summary of Underlying Geology*

GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	None recorded	N/A	N/A
Solid	Cefn Rock	Sandstone gravel	Secondary A Aquifer

4.2 Mining Features

The 1:10,000 geological mapping for the area identifies the presence of the Lower Stinking coal seam located circa 1km to the west of the site dipping in an easterly direction with no dip indicated. There are no coal seams outcropping within the site or in immediate proximity to the site.

Four mine shafts are indicated in close proximity to the site in the same locations as indicated by the Coal Authority.

4.3 Geotechnical Data

Geotechnical Data presented within a commercially available environmental database is summarised within Table 4.2.

Table 4.2 *Summary of Geotechnical Data*

HAZARD	DESIGNATION
Shrink-Swell Clay	Very Low Risk
Landslides	Very Low to Low Risk
Ground Dissolution	No Hazard
Compressible Ground	No Hazard
Collapsible Deposits	Very Low Risk
Running Sand	Very Low Risk

5. COAL AUTHORITY DATA

5.1 Desk Based Coal Mining Risk Assessment

The Envirocheck Report states the site is in an area which may be affected by coal mining.

A Coal Authority Mining Report was obtained (Ref: 51001169633001) dated 1st June 2016.

The Coal Authority operates a risk based approach to the assessment of potential instability issues associated with future development of land located within the pre-defined Coal Authority Consultation Areas. This risk based approach sub-divides the potential risk into 'Low & High' Risk Categories.

The Risk Categories can be defined as:

Low Risk Sites - Deemed to be land where coal mining has taken place, however it was at such depth not to pose a risk to new development and it therefore contains no known recorded risks and as such no further assessment is required.

For Low Risk Sites, the Coal Authority categorically state:

*"If your proposed development is within the Development Low Risk Area **there is no need for you to submit any coal mining information with your planning application** and The Coal Authority will not be consulted by the LPA. The LPA will include our Standing Advice as an informative note within the decision notice".*

High Risk Sites are deemed to be landholdings located within an area known to contain legacy risks that include:

-  Mine entries (shaft or Adit);
-  Shallow Coal Workings (recorded and probable);
-  Workable coal seam outcrops;
-  Mine gas sites and areas;
-  Recorded coal mining related hazards;
-  Geological features (fissures and break lines); and,
-  Former surface mining sites (sometimes using historic opencast extraction methods).

5.1.1 Coal Mining Information

Prior to the enactment of the Coal Mines Regulation Act (1872) which came into force on the 1st January 1883, there was no statutory requirement to record the extent of abandoned mine workings and as such the Coal Authority has no knowledge of extensive workings throughout the UK Coal Fields where shallow workings are present at a depth which could result in a subsidence event in the future (through successive cavitation) associated with failure of support mechanism.

To determine if a site may have unrecorded or recorded coal mine workings requires a consideration of a wide range of information and E3P has completed a review of relevant



information in relation to potential coal mining activities. Table 5.1 provides a summary of pertinent coal mining information.

Table 5.1 Coal Mining Information

SOURCES OF INFORMATION	SUMMARY
Coal Authority Mining Report	The Coal Authority Mining Report (Ref: 51001469126001) dated May 2017 has been obtained for the subject site by E3P. This report confirmed: ▪ <i>Past underground coal mining has been recorded nine times beneath the site, the shallowest of which was at 31m with an extraction thickness of 180cm;</i> ▪ <i>4 No. known coal mine entries are located within, or within 20 metres of the site boundary;</i> ▪ <i>There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property;</i> ▪ <i>The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.</i> ▪ <i>No faults, fissures or breaklines recorded; and</i> ▪ <i>The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.</i>
Coal Authority Interactive Map	The site is located within an area affected by shallow coal mining, therefore an initial review of the Coal Authority GIS mapping has been undertaken. There are records of coal outcrops located circa 1km to the west of the site which would suggest that any workings present beneath the site are at a considerable depth. That being said there are four mine shaft entries located on the northern boundary of the site with more further north, and records of past shallow coal workings are present adjacent to the site.
British Geological Survey Mapping	The 1:10,000 geological mapping for the area identifies the presence of the Lower Stinking coal seam located circa 1km to the west of the site dipping in an easterly direction with no dip indicated. There are no coal seams outcropping within the site or in immediate proximity to the site. Four mine shafts are indicated in close proximity to the site in the same locations as indicated by the Coal Authority.
Review of Coal Authority Archive	No Coal Authority archives / Mine Abandonment Plans are made available.
Historical Ordnance Survey Mapping	A review of the 1:10,000 and 1: 2,500 Ordnance Survey mapping from c. 1873 which has records of the following features which indicate historical mine workings in proximity to the application site: ▪ Westminster Colliery / Shafts – 100m North; The mining features are indicated from the earliest historical maps in 1873 with the possibility that they were in place prior to the introduction of the Mining & Regulation Act of 1872. If so, there may be unrecorded, mining activities in the vicinity of the site.

SOURCES OF INFORMATION	SUMMARY
	The Summerhill Tunnel is also indicated on the historical mapping shown to be leading from the Westminster Colliery to the north west of the site, beneath the site and connecting with the railway to the east of the site. This tunnel was formerly utilised to transport coal from the Westminster Colliery and remains in-situ beneath the site.
Historical Site Investigations	E3P has not been provided with any historic site investigation reports.

5.1.2 Desk Based Coal Mining Risk Assessment

This Risk Assessment comprises a desk-based review of all available information on the coal mining issues which are relevant to the application site deemed to be located within a 'High Risk' area. This includes:

-  Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
-  Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and,
-  Demonstrating to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

The Coal Mining Risk Assessment is summarised in Table 5.2.

Table 5.2 Summary of Coal Mining Risk Assessment

COAL MINING RISK ASSESSMENT	YES / NO	RISK ASSESSMENT
Recorded Underground Coal Mining at Shallow Depth (<30m)	No	Low
Recorded Underground Coal Mining at Shallow Depth (>30m)	Yes	Low
Evidence of unrecorded surface extraction of coal outcrop	No	Low
Unrecorded Underground Coal Mining at Shallow Depth (<30m)	Yes	Moderate
Mine Entries (Shaft / Adits)	No	Low
Coal Mining Geology – Fractures / Fissures	No	Low
Recorded Gas Emissions	No	Low
Recorded Mining Surface Hazard	No	Low
Surface Mining (opencast)	No	Very Low / Low

Based on the above, a high risk of mine entries within or adjacent to the site boundary has been identified.



The Coal Authority as a statutory consultee will require a probing exercise to be undertaken in the locality of the mine shafts in the northern sector of the site to determine their exact position and assess their influence on potential development.

5.2 Local Authority Building Control

E3P has contacted the Building Control department of Wrexham County Borough Council in relation to the disused Summerhill Tunnel which runs beneath the northern sector of the site and the potential for shallow coal mining.

The response included a 1912 map of the tunnel and its association with the surrounding area. Building Control confirmed that low level residential could be considered acceptable on the site, subject to further structural clarification and foundation design in the context of potential ground conditions. Given the adjacent former colliery potential mining operations would need consideration.



6. GROUND INVESTIGATION

The coal mining Ground Investigation has been designed based on the findings of the desk top Coal Mining Risk Assessment with exploratory holes advanced to confirm:

-  The presence of shallow mine workings;
-  The presence of mine entries; and,
-  The presence of the existing disused tunnel.

The investigation comprised the following works:

-  3 x Rotary Open Holes to investigate the potential for shallow mine workings
-  3 x mechanically excavated Trial Trenches to investigate the disused tunnel; and,
-  2 x mechanically excavated Trial Trenches to investigate the mapped mine shafts.

6.1.1 Summary of Ground Conditions

The ground investigation generally confirms the published geology and identifies the strata set out in Table 6.1 below:

Table 6.1 *Summary of Strata*

BOREHOLE	GENERAL DESCRIPTION:	DEPTH (mBGL):		COAL / WORKINGS
RB101	Topsoil with underlying SAND	0.00	5.20	N/A
	SANDSTONE	5.20	6.70	N/A
	Void, broken ground	6.70	6.90	Workings or fractured sandstone
	SANDSTONE	6.90	8.60	N/A
	MUDSTONE	8.60	9.00	N/A
	Intact COAL	9.00	9.40	Intact – not worked
	MUDSTONE	9.40	15.20	N/A
	SANDSTONE	15.20	40.00	N/A
RB102	Topsoil with underlying SAND	0.00	5.20	N/A
	SANDSTONE	5.20	6.60	N/A
	MUDSTONE	6.60	18.20	N/A
	SANDSTONE	18.20	40.00	N/A

BOREHOLE	GENERAL DESCRIPTION:	DEPTH (mBGL):		COAL / WORKINGS
RB103	Topsoil with underlying gravelly SAND	0.00	5.90	N/A
	SANDSTONE	5.90	7.00	N/A
	Broken ground	7.00	7.35	Workings or fractured sandstone
	SANDSTONE	7.35	10.30	N/A
	MUDSTONE	10.30	10.90	N/A
	Intact COAL	10.90	11.30	Intact – not worked
	MUDSTONE	11.30	17.00	N/A
	SANDSTONE	17.00	40.00	N/A

During the intrusive Ground Investigation, there was evidence of broken ground or workings of a circa 0.20m thickness in the northern sector of the site with a circa 0.40m thick intact coal seam present circa one metre deeper in both RB101 and RB103. No evidence of coal or workings were recorded within RB102 located further south towards the central site sector.

6.1.2 Trial Trench to Locate Mine Entries

Trial trenches were formed across the northern boundary of the site in the area of the Coal Authority recorded positions of the mine entries 330353-046 and 330353-047. The trial trenches were formed to facilitate the inspection of superficial drift deposits and where possible the shallow bedrock. The specific aim of the excavation was to assess the potential presence of anthropogenic features such as a shaft lining that would indicate the recorded mine entry in this sector. The excavations also included detailed engineering geologist assessment with respect to the angle of dip, extent of fragmentation, and possible evidence of any effects of mine working such as broken ground.

During the process of the advancement of the trial trenches, no evidence of either mine shaft could be identified within the site boundary.

7. DETAILED COAL MINING RISK ASSESSMENT

Following the completion of a desk based coal mining risk assessment which has identified the potential for shallow coal workings beneath the site, E3P has completed a detailed intrusive Ground Investigation comprising three rotary open holes and a series of mechanically excavated trial trenches to investigate the mapped mine shafts on the northern boundary of the site.

Investigation of the mine shafts has confirmed the mine shafts do not encroach on the proposed development site. Due to the fact that no development is intended within 10-15m of the northern boundary, no further action is required in relation to the mine shafts.

The advancement of rotary open holes identified intact coal seams within RB101 at 9.00m-9.40m bgl and in RB103 at 10.90m-11.30m bgl. Furthermore, within both of these rotary open holes, a thin band of broken ground / void was encountered at 6.70m-6.90m bgl in RB101 and at 7.00m-7.35m bgl in RB103. It is considered that due to the absence of any coal seam outcropping within the site or within the immediate surrounding area, in addition to there being no records of workings within the upper 10m, it is likely that this voided ground is fracturing within the sandstone and not indicative of coal workings. This argument is strengthened by the fact that no evidence of coal or workings was identified within RB102. Furthermore, no evidence of the thin workings within the Lower Stinking coal seam at circa 30m was identified, as recorded by the Coal Authority.

With this in mind, it is considered that the proposed development is not any unacceptable risk from instability from shallow coal workings.

However, it should be noted that due to the location of the disused tunnel beneath the site at a depth of circa 20m, which remains intact but structurally unsound, a risk of instability to the proposed development still exists and the tunnel will either require stabilisation by grouting or a stand-off no build zone will need to be applied to the proposed development.

END OF REPORT

APPENDIX I LIMITATIONS



1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
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10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.



APPENDIX II GLOSSARY



TERMS

AST	Above Ground Storage Tank
BGS	British Geological Survey
BSI	British Standards Institute
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CIEH	Chartered Institute of Environmental Health
CIRIA	Construction Industry Research Association
CLEA	Contaminated Land Exposure Assessment
CSM	Conceptual Site Model
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)
DWS	Drinking Water Standard
EA	Environment Agency
EQS	Environmental Quality Standard
GAC	General Assessment Criteria
GL	Ground Level
GSV	Gas Screening Value
HCV	Health Criteria Value
ICSM	Initial Conceptual Site Model
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)
ND	Not Detected
LMRL	Lower Method Reporting Limit
NR	Not Recorded
PAH	Poly Aromatic Hydrocarbon
PCB	Poly-Chlorinated Biphenyl
PID	Photo Ionisation Detector
QA	Quality Assurance
SGV	Soil Guideline Value
SPH	Separate Phase Hydrocarbon
Sp.TPH (CWG)	Total Petroleum Hydrocarbon (Criteria Working Group)
SPT	Standard Penetration Test
SVOC	Semi Volatile Organic Compound
UST	Underground Storage Tank
VCCs	Vibro Concrete Columns
VOC	Volatile Organic Compound
WTE	Water Table Elevation

UNITS

m	Metres
km	Kilometres
%	Percent
%v/v	Percent volume in air
mb	Milli Bars (atmospheric pressure)
l/hr	Litres per hour
µg/l	Micrograms per Litre (parts per billion)

ppb	Parts Per Billion
mg/kg	Milligrams per kilogram (parts per million)
ppm	Parts Per Million
mg/m ³	Milligram per metre cubed
m bgl	Metres Below Ground Level
m bcl	Metre Below Cover Level
mAOD	Metres Above Ordnance Datum (sea level)
kN/m ²	Kilo Newtons per metre squared
µm	Micro metre



APPENDIX III DRAWINGS





Drawing 11-780-001

Site Location Plan

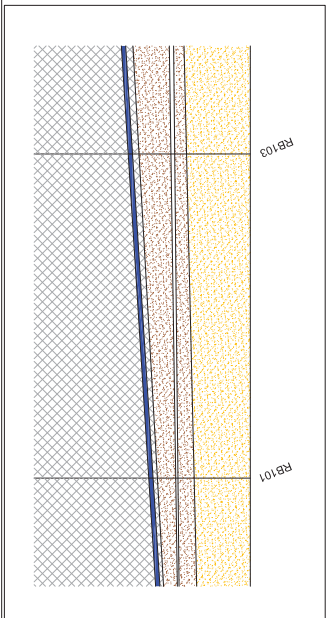
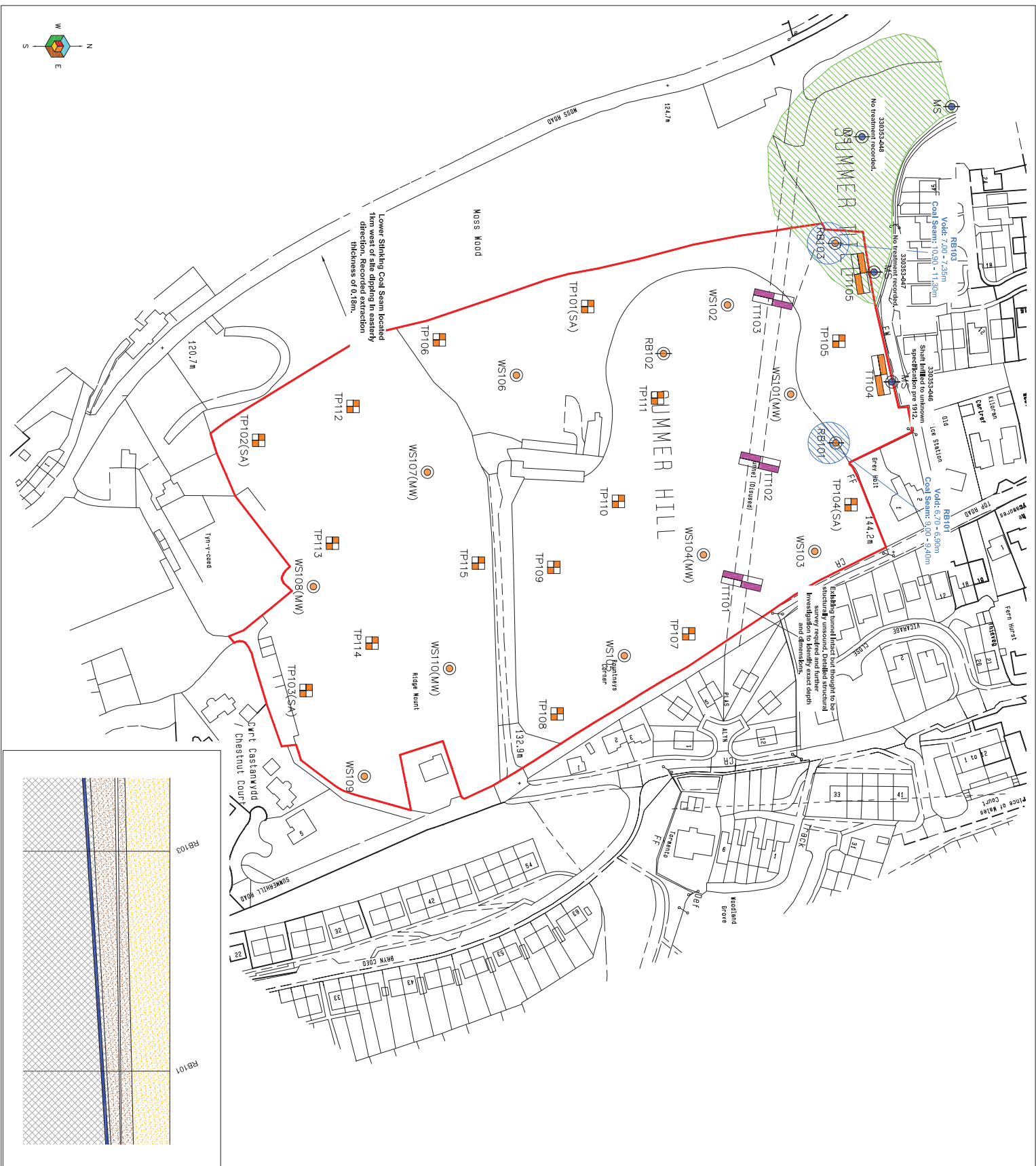




Environmental Energy Engineering Ltd
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Website: www.ee3p.co.uk

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Name:			
P1 Phase	Revision	15-06-2017	
	Date		
	Client: Macbrayde Homes Ltd		
DRAFT Issue	Drawn	CS	MD
	Authorised		
	Job No: 11-780		
	Drawing No: 002		
Date: 15-06-2017		Scale: NTS @ A3	
Drawing Title: Proposed Development Plan			
Job Title: Top Road, Wrexham			



Location Symbols

- Approximate Window Sample Probehole Location
- Approximate Window Sample Probehole Location with Inset
- Approximate Trial Pit Location
- Approximate Trial Pit Location with Soakaway Test
- Approximate Pottery Borehole Location
- Approximate Mine Shaft Location
- Approximate Trial Trench location to Investigate Disused Tunnel
- Approximate Trial Trench location to Investigate Mine Shafts

Coal Mining Issues

- Location Where Coal Seam has been Identified
- Shallow Coal Mine Workings (Recorded on Coal Authority (GTS))
- Approximate Mapped Mine Shaft Location

Cross Section

- Sand
- Grey Mudstone
- Brown Sandstone
- Coal Seam Identified
- Void Identified

Notes

Client	Machyde Homes Ltd	Job No.	11-780	Date	19.07.2017
Revision	REVISION	Issue	Issue	Drawn	Authorised
P1	R1	19.07.2017	REVISION	CB	MD
P1	-	18.07.2017	DRAFT	RV	MD

Top Road, Wrexham

Coal Mining Issues Plan

e3p

Environmental Energy Engineering
City Hallport & Business Centre
Eccles, Manchester, M30 7BU
Tel: 0161 707 9612
Email: info@e3p.co.uk
Website: www.e3p.co.uk

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APPENDIX IV HISTORICAL MAPS





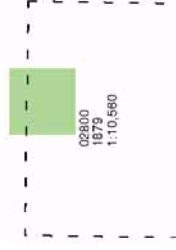
Denbighshire

Published 1879

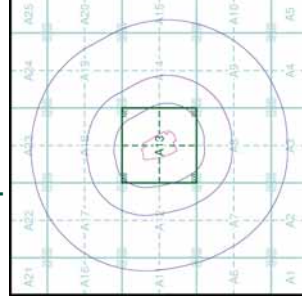
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 123776395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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



Denbighshire

Published 1914 - 1915

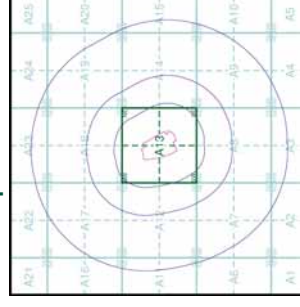
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at 1:10,560 scale for England, Wales and Scotland in the 1940's. In 1854 a 1:250,000 scale map of the British Isles was published. This map was used to update the 1:10,560 maps. The published date given therefore often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

021SW 1914 1:10,560	021SE 1914 1:10,560
028NW 1914 1:10,560	028NE 1915 1:10,560

Historical Map - Slice A



Order Details

Order Number: 123776395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

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WREXHAM, LL11 4SP



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



Denbighshire

Published 1938 - 1954

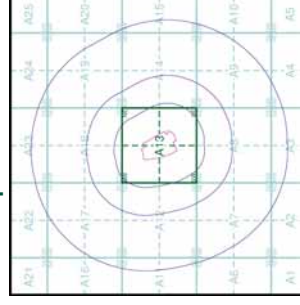
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at 1:63,360 scale for England, Wales and Scotland in the 1940's. In 1954, the Ordnance Survey published a series of maps at 1:10,560 scale, which were used to update the 1:63,360 maps. The published date given therefore often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

021SW 1954 1:10,560	021SE 1938 1:10,560
028NW 1938 1:10,560	028NE 1938 1:10,560

Historical Map - Slice A



Order Details

Order Number: 123776395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



Tel: 0844 844 9952
Fax: 0844 844 9951
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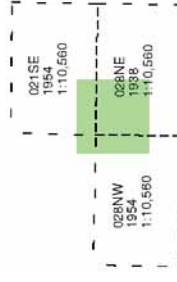
Denbighshire

Published 1938 - 1954

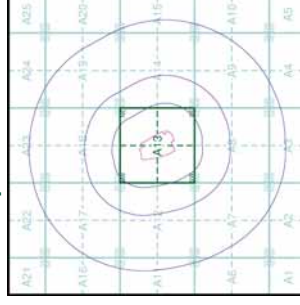
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at 1:25,000 scale adopted for England, Wales and Scotland in the 1840's. In 1854 the Ordnance Survey published the first 1:50,000 scale map. These maps were used to update the 1:10,560 maps. The published date given therefore are often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 123776395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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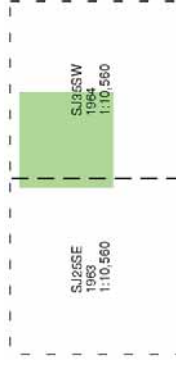


Ordnance Survey Plan Published 1963 - 1964

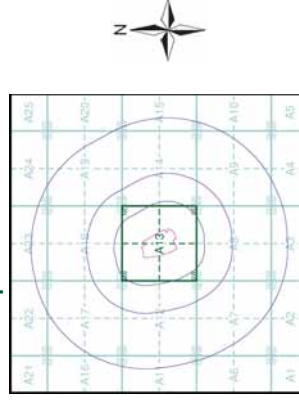
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at 1:10,000 scale for England, Wales and Scotland in the 1940's. In 1954 a 1:25,000 scale map was produced for the first time. The maps were used to update the 1:10,000 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 12378395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



Tel: 0844 844 9952
Fax: 0844 844 9951
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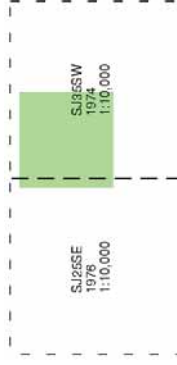


Ordnance Survey Plan Published 1974 - 1976

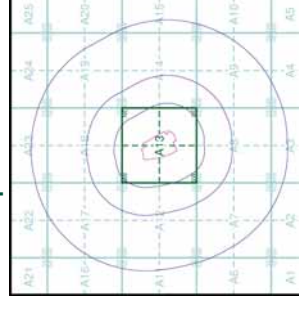
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at 1:10,000 scale for England, Wales and Scotland in the 1940's. In 1954, the Ordnance Survey decided to update the 1:10,000 maps. The maps were used to update the 1:10,000 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 12378395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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Fax: 0844 844 9951
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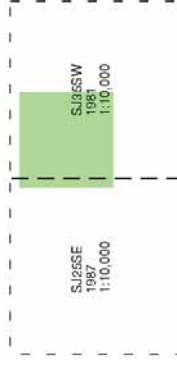


Ordnance Survey Plan Published 1981 - 1987

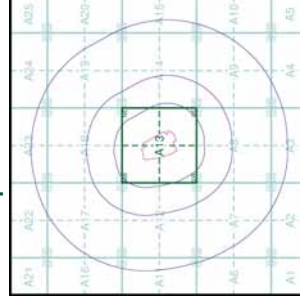
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at 1:10,000 scale for England, Wales and Scotland in the 1940's. In 1984, the Ordnance Survey published a series of maps at 1:10,000 scale, which were used to update the 1:10,000 maps. The published date given therefore often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 123778395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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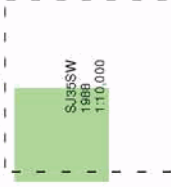


Ordnance Survey Plan Published 1988

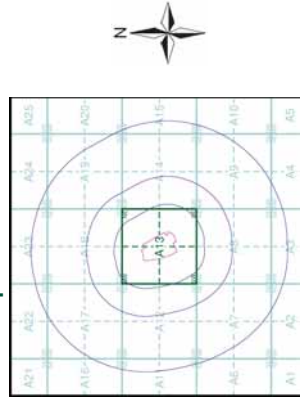
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at 1:10,000 scale for England, Wales and Scotland in the 1940's. In 1954 a new edition of the 1:10,000 maps was published. These maps were used to update the 1:10,000 maps. The published date given therefore often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 12376395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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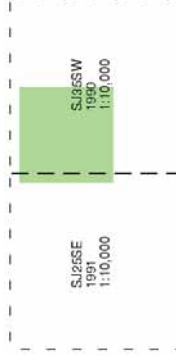


Ordinance Survey Plan Published 1990 - 1991

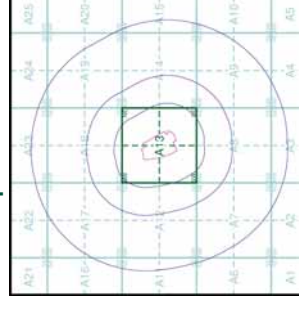
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at 1:10,000 scale for England, Wales and Scotland in the 1940's. In 1954, the Ordnance Survey decided to update the 1:10,000 maps. The maps were used to update the 1:10,000 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 12378395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



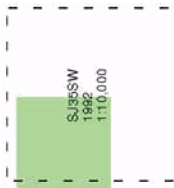
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



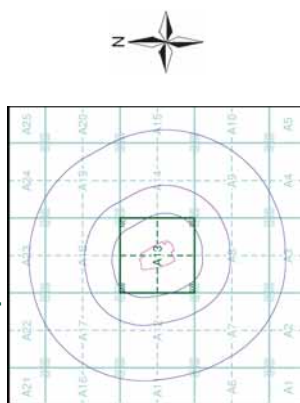
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s or, in 1854 at the 1:2,500 scale was adopted for mapping urban areas; these maps are used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed data. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single parish or township. In the late 1940s, a 'Practical Edition' was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished, with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:110,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 123778395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
A
Site Area (Ha): 5.5
Search Buffer (m): 1000

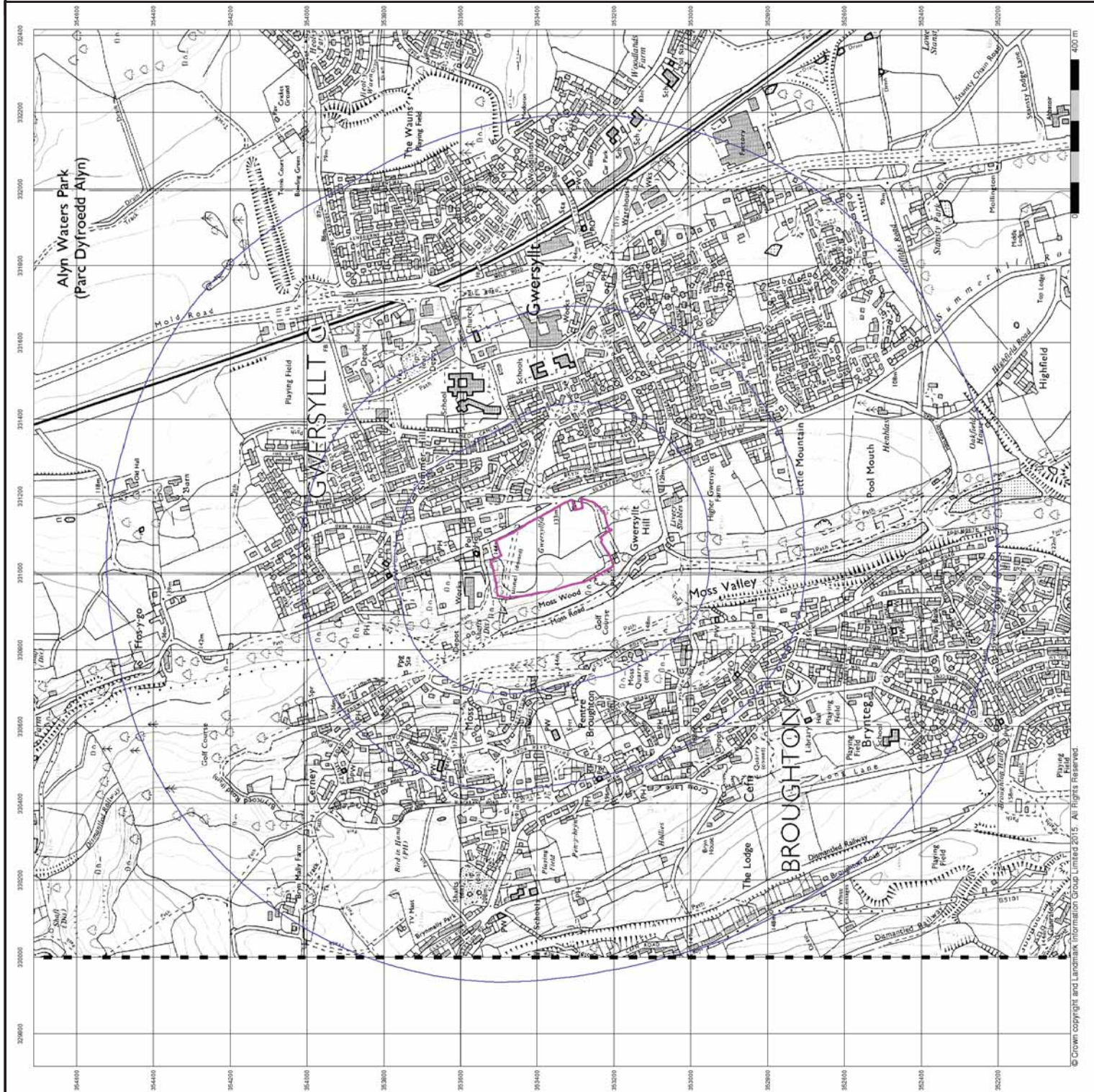
Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
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A Landmark Information Group Service v50.0 08-May-2017 Page 15 of 17





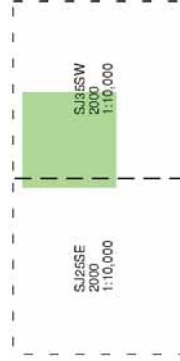
10k Raster Mapping

Published 2000

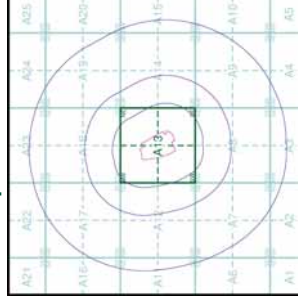
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster map data. These maps are derived from data which was first published in 1970. The data is highly detailed showing buildings, roads, railways, 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 includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 12376395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP



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Web: www.envirocheck.co.uk



Street View

Published 2017

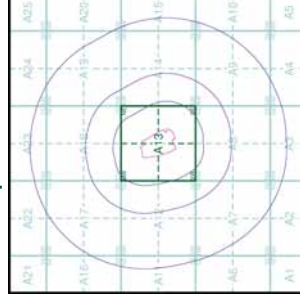
Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)



Street View Map - Slice A



Order Details

Order Number: 123776395_1_1
Customer Ref: 11-780
National Grid Reference: 331060, 353360
Slice: A
Site Area (Ha): 5.5
Search Buffer (m): 1000

Site Details

Land Adjoining Summerhill Motors, Top Road, Summerhill,
WREXHAM, LL11 4SP

Landmark
INFORMATION GROUP

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

APPENDIX V ROTARY LOGS





Trial Pit Log

Trialpit No

TT101

Sheet 1 of 1

Project Name: Top Road

Project No.
11780Co-ords: -
Level:Date
23/05/2017

Location: Wrexham

Dimensions
(m):

4.00

Client: Macbryde Homes Ltd

Depth
2.50

0.80

Scale
1:25Logged
G. Hirst**Samples and In Situ Testing**

Depth

Type

Results

Depth
(m)Level
(m)

Legend

Stratum Description

0.30

2.50

Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone.

Light brown gravelly fine to coarse SAND with frequent cobbles and bouldes. Gravel is medium to coarse angular to sub-angular of sandstone.

End of pit at 2.50 m

1

2

3

4

5

Remarks: Complete.

Stability: Stable.





Trial Pit Log

Trialpit No

TT102

Sheet 1 of 1

Project Name: Top Road

Project No.
11780Co-ords: -
Level:Date
23/05/2017

Location: Wrexham

Dimensions
(m):

4.00

Client: Macbryde Homes Ltd

Depth
1.80

0.80

Scale
1:25Logged
G. Hirst**Samples and In Situ Testing**

Depth

Type

Results

Depth
(m)Level
(m)

Legend

Stratum Description

0.30

1.00

1.80

Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone.

Red brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-angular of sandstone.

Light brown gravelly medium to coarse SAND with frequent cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.

End of pit at 1.80 m

1

2

3

4

5

Remarks: Terminated at 1.80m bgl on potential bedrock.

Stability: Stable.





Trial Pit Log

Trialpit No

TT103

Sheet 1 of 1

Project Name: Top Road

Project No.
11780Co-ords: -
Level:Date
23/05/2017

Location: Wrexham

Dimensions
(m):

4.00

Client: Macbryde Homes Ltd

Depth
2.40

0.70

Scale
1:25Logged
G. Hirst**Samples and In Situ Testing**

Depth

Type

Results

Depth
(m)Level
(m)

Legend

Stratum Description

0.30

1.10

2.40

Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone.

Orange brown very gravelly fine to medium SAND with frequent cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.

Light brown very gravelly medium to coarse SAND with frequent cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.

End of pit at 2.40 m

1

2

3

4

5

Remarks: Collapsing due to removal of large boulders.

Stability: Unstable.





Trial Pit Log

Trialpit No

TT104

Sheet 1 of 1

Project Name: Top Road

Project No.
11780Co-ords: -
Level:Date
23/05/2017

Location: Wrexham

Dimensions (m): 4.00

Client: Macbryde Homes Ltd

Depth
2.60

0.80

Scale
1:25Logged
G. Hirst**Samples and In Situ Testing**

Depth

Type

Results

Depth
(m)Level
(m)

Legend

Stratum Description

0.20

ES

0.40

1.20

2.60

MADE GROUND: Black gravelly fine to medium sand with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone, porcelain and glass.

Orange brown gravelly medium to coarse SAND with cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.

Light brown gravelly medium to coarse SAND with cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.

End of pit at 2.60 m

1

2

3

4

5

Remarks: Complete.

Stability: Unstable.





Trial Pit Log

Trialpit No

TT105

Sheet 1 of 1

Project Name: Top Road

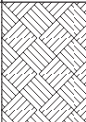
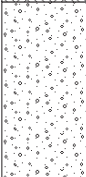
Project No.
11780Co-ords: -
Level:Date
23/05/2017

Location: Wrexham

Dimensions
(m):Depth
1.20Scale
1:25

Client: Macbryde Homes Ltd

Logged
G. Hirst**Samples and In Situ Testing**

Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
0.80	ES		0.40			Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.
			1.00			Orange brown sandy GRAVEL with frequent cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.
			1.20			Light brown gravelly medium to coarse SAND with cobbles and boulders. Gravel is medium to coarse angular to sub-angular of sandstone.
						End of pit at 1.20 m

1

2

3

4

5

Remarks: Complete.

Stability: Stable.





Borehole Log

Borehole No.

RB101

Sheet 1 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

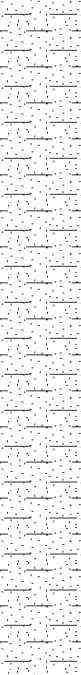
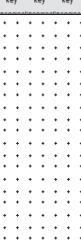
Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 31/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	
								Brown slightly clayey gravelly fine to medium SAND with cobbles and boulders. Gravel is fine to coarse angular to sub-angular of sandstone.	1
									2
									3
									4
					5.20			Brown SANDSTONE.	5
									6
					6.70			Void, Broken ground.	
					6.90			Brown SANDSTONE.	7
									8
					8.60			Grey MUDSTONE.	
					9.00			COAL seam.	9
					9.40			Grey MUDSTONE.	
									10

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB101

Sheet 2 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 31/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					15.20				11
									12
									13
									14
									15
					18.20			Very hard grey SANDSTONE with mudstone bands.	16
									17
									18
								Brown SANDSTONE.	19
									20

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB101

Sheet 3 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 31/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					26.10				21
									22
									23
									24
									25
									26
								Grey SANDSTONE with brown sandstone bands.	27
									28
									29
									30

Continued on next sheet

Remarks
Complete.





Borehole Log

Borehole No.

RB102

Sheet 1 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

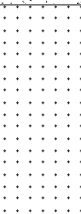
Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	
								Brown gravelly fine to medium SAND with cobbles and boulders. Gravel is fine to coarse angular to sub-angular of sandstone.	1
									2
									3
									4
					5.20			Yellow SANDSTONE (weathered).	5
									6
					6.60			Grey MUDSTONE (weathered).	7
									8
									9
									10

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB102

Sheet 2 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					12.60				11
					13.10			Dark grey MUDSTONE.	12
								Grey MUDSTONE with grey sandstone bands.	13
									14
									15
									16
									17
									18
					18.20			Brown SANDSTONE with grey mudstone bands.	19
									20

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB102

Sheet 3 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 -

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									21
									22
									23
									24
									25
									26
									27
									28
									29
									30

Continued on next sheet

Remarks
Complete.





Borehole Log

Borehole No.

RB103

Sheet 1 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

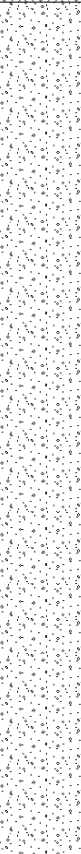
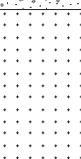
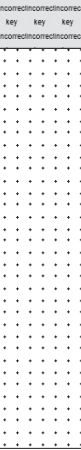
Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 - 31/05/2017

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Dark brown gravelly fine to medium SAND (Topsoil) with rootlets. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	
								Brown gravelly fine to medium SAND with cobbles and boulders. Gravel is fine to coarse angular to sub-angular of sandstone.	1
									2
									3
									4
									5
					5.90			Brown SANDSTONE.	6
					7.00			Broken ground, loss of flush.	7
					7.35			Brown grey SANDSTONE.	8
									9
									10

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB103

Sheet 2 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 - 31/05/2017

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					10.30			Grey MUDSTONE.	
					10.90			COAL seam.	11
					11.30			Grey MUDSTONE.	
									12
									13
									14
									15
									16
					17.00			Dense brown grey SANDSTONE.	17
									18
									19
					19.80			Grey SANDSTONE.	20

Continued on next sheet

Remarks
Complete.



Borehole Log

Borehole No.

RB103

Sheet 3 of 4

Project Name: Top Road

Project No.
11780

Co-ords: -

Hole Type
BH

Location: Wrexham

Level:

Scale
1:50

Client: Macbryde Homes Ltd

Dates: 30/05/2017 - 31/05/2017

Logged By
G. Hirst

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					23.40				21
									22
									23
								Brown SANDSTONE with grey sandstone bands.	24
									25
									26
									27
									28
									29
									30

Continued on next sheet

Remarks
Complete.



APPENDIX IV COAL AUTHORITY INFORMATION





The Coal
Authority

Resolving the **impacts** of mining

Non-Residential Coal Mining Consultants Report



LAND OFF TOP ROAD, SUMMERHILL, WREXHAM, LL11 4SP

Date of enquiry:	19 May 2017
Date enquiry received:	19 May 2017
Issue date:	19 May 2017

Our reference:	51001469126001
Your reference:	11780/6041/gh

Non-Residential Coal Mining Consultants Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

E3P

Enquiry address

LAND OFF TOP ROAD, SUMMERHILL, WREXHAM,
LL11 4SP

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Detailed findings

Past underground coal mining

Colliery	Seam	Mineral	Panel	Depth (m)	Direction to working	Disposition	Extraction thickness (cm)	Year
unnamed	LOWER STINKING	Coal	3VJG	31	Beneath Property	0.0	180	1949
unnamed	TWO YARD	Coal	3U2R	111	Beneath Property	0.0	180	1920
unnamed	POWELL	Coal	3VKK	113	Beneath Property	0.0	130	1910
unnamed	POWELL	Coal	3VKL	127	N	0.7	130	1911
unnamed	CRANK	Coal	3U3V	143	Beneath Property	0.0	80	1909
unnamed	QUAKER	Coal	3U4X	153	Beneath Property	0.0	140	1925
unnamed	MAIN	Coal	3V2L	163	Beneath Property	0.0	200	1903
unnamed	MAIN	Coal	3V2K	194	Beneath Property	0.0	210	1903
unnamed	WALL AND BENCH	Coal	3V5P	274	Beneath Property	0.0	70	1911

Probable unrecorded shallow workings

None.

Outcrops

None recorded.

Spine roadways at shallow depth

None recorded.

Future underground mining

None recorded.

Licence details (AOR)

None recorded.

Section 46 notices

None recorded.

Geology

No faults, fissures or breaklines recorded.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyance details
Shaft	330353-091	330867 353517		Coal	
Shaft	330353-047	330931 353498		Coal	
Shaft	330353-046	330984 353522	Shaft filled to an unknown specification pre 1925. Shaft located by Groundsolve Ltd, Unit 7, Well House Barns, Chester Road, Bretton, Flintshire CH4 0DH under Permit 6635. Excavation works started on the 28th June 2012, with the excavation being taken down to solid sandstone bedrock at a depth of around 4 metres. The interior of the shaft was also excavated to a depth of 3 metres to allow for a shaft plug which was established on the 28th June 2012 with around 21m³ of concrete being poured, the concrete supplied being RC28/35 mid. Shaft capping commenced on the 16th July 2012 with concrete blinding, comprising some 12m³ of RC28/35 Mid Concrete being placed on the 17th July. On the 18th reinforcement comprising T40's at 200mm c/c were placed before a shaft cap measuring 6.5m x 6.5m was established using 24m³ of RC28/35 Mid Concrete. The excavation was then backfilled using a well graded crushed concrete which had been obtained from an old concrete slab on site	Coal	
Adit	330353-048	330874 353497		Coal	
Shaft	330353-050	330847 353561	The shaft was filled to an unknown specification by the NCB Estates Dept at an unknown date.	Coal	
Adit	330353-049	330855 353515	The drift entrance was filled to an unknown specification pre 1967.	Coal	

Court orders

None recorded.

Worked out opencast sites

None recorded.

Coal mining related hazards

None recorded.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Enquiry boundary

Key

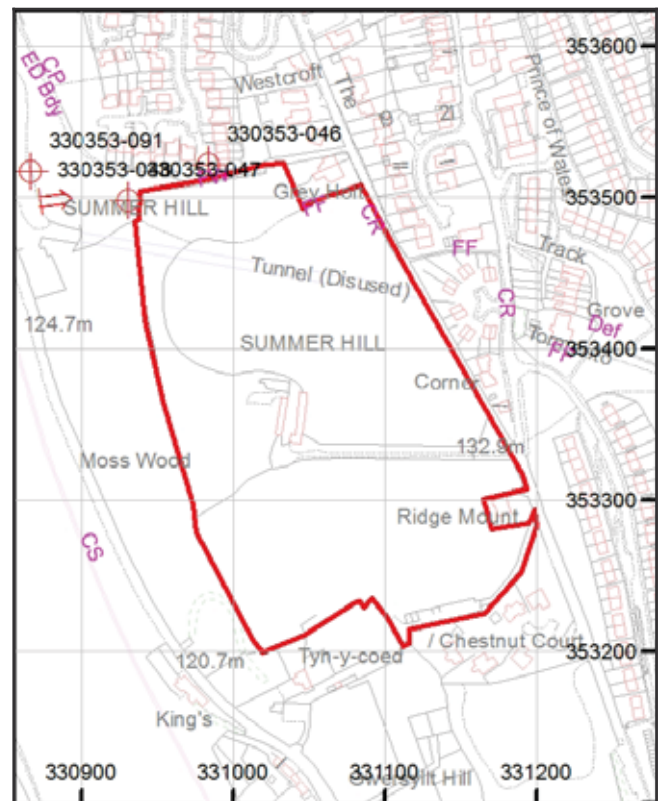
Approximate position of enquiry boundary shown



Disused adit



Disused mineshaft



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www.groundstability.com



/company/the-coal-authority



/thecoalauthority



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/coalauthority
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