

Johnstown

Proposed Residential Development

Geo Environmental Report - Rev A

Gower Homes



GroundSolve Ltd

Consulting Geotechnical, Engineering Geology and Environmental Engineers

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1.0 INTRODUCTION

Gower Homes (GH) proposed to purchase and redevelop a site off Ruabon Road, Johnstown, for residential use. At the time of purchase the site was occupied by a disused used car dealership, and was vacant.

The proposed development will comprise ten detached and semi-detached residential plots with gardens, and an access road from Ruabon Road.

GH subsequently appointed GroundSolve Ltd (GSL) to carry out a Phase I Desk Study for the site, and to identify the requirements of a Phase II intrusive site investigation. A preliminary site investigation included initial chemical testing, along with permeability testing to determine if a SUDS drainage scheme would be feasible.

The subsequent report was carried out to provide sufficient information to enable GH to purchase the site, with the report issued in May 2021. The findings of the report were limited at the time because of the presence of existing buildings and changes in levels, along with poor access around the site. Consequently, the report recommended additional testing in those areas that were inaccessible at the time of the initial investigation.

Following this the site was purchased by GH and they applied for planning permission, with one of the planning conditions relating to potentially contaminated land.

The Phase 1 and Phase 2 Reports GSL were submitted to Wrexham County Borough Council (WCBC), and the additional testing to satisfy the planning conditions agreed following demolition of the existing buildings.

Additional site investigation was then undertaken. This report presents the findings of the desk study and all site investigations to date. It updates the geotechnical recommendations following the additional site investigation and demolition of the buildings. In addition, the conceptual ground model and risk assessments have been updated.

2.0 THE SITE

2.1 Site Location and Description

The site is located in Johnstown, Wrexham, at National Grid Reference 330120, 345980, see Figure 1.

It is bounded by residential properties and flats to the west, south, and southeast, with a primary school located immediately to the north, see Figure 2. A playing field associated with the school is situated east of the site boundary.

The site is situated at a lower level than Ruabon Road (elevation 129mOD), at an approximate elevation of 126mOD. A low retaining wall forms the eastern site boundary along the southern half of the site, with the land to the east of the boundary at an elevation of 124mOD. The site is roughly square in shape, being between 50 and 60m in width/length.

The site was occupied by several masonry buildings and a more modern brick and metal-clad industrial unit, accessed via a central tarmac parking area/driveway, all of which were formerly used as a car and tyre sales centre, and for vehicle repair. A storage shed was situated in the northwestern part of the site, where flammable chemicals used for vehicle bodywork repair are stored.

An electrical substation and bunded oil tank are situated immediately northwest of the site, although there is currently no physical boundary between the site and the substation.

Old portacabins, which appear to have been used as offices or for storage, were located along the southern boundary.

At the time of the additional investigation, all of the buildings had been demolished and crushed to form a suitable structural fill for re use on site. A large stockpile of this crushed material was present on the western side of the site.

Photographs showing the site at the time of the initial walkover and following demolition are presented in Appendix A.

2.2 Geology and Hydrogeology

The geology of the site has been studied on the 1:50,000 scale geology plan, Sheet 121 Wrexham, the associated memoirs, Reference 1, along with geological information contained in an Envirocheck report that was obtained for the site, see Appendix B.

The geology plans show the site to be underlain by glacial till, with the underlying bedrock which is Carboniferous in age. This comprises sandstone of the Cefn Rock, which is part of the Pennine Middle Coal Measures Formation. The Cefn Rock typically comprises massive, quartzose sandstone, with subordinate and impersistent beds of mudstone and coal.

The bedrock beneath the site is classified as a Secondary A aquifer, whilst the superficial deposits are recorded as a Secondary Undifferentiated aquifer. Groundwater is unlikely to be encountered at shallow depth beneath the site, with the groundwater table anticipated to lie at depth within the sandstone.

2.3 History

The history of the site has been studied using old Ordnance Survey (OS) plans and aerial photographs dating from 1874, at a scale of 1:2,500 unless stated otherwise.

The 1874 OS plan shows the site to be occupied by several buildings named “Tan-y-clawdd”, with an orchard in the northeastern corner, extending to the north of the site, see Figure 3a. A pump is marked near the centre of the site. A Smithy is located immediately to the north of the site. A road bounds the site to the east, following the line of the remains of Offa’s Dyke. The surrounding land is largely fields, with some residential development evident to the north, and spoil heaps associated with the nearby Brandie Pits situated some 200m to the southwest.

The 1900 OS plan no longer shows the orchard or pump, but shows a possible pond in the southern part of the site adjacent to the existing buildings, see Figure 3b. Residential development is evident west of the site, with Belgrave Terrace having been constructed to the west of Ruabon Road. A timber yard is shown 100m to the northwest of the site boundary.

The 1912 and 1938 (1:10,560 scale) OS plans show no significant changes on site, but show a school to have been constructed to the north of the Smithy, and further development within the village of Johnstown, see Figures 3c and 3d.

The 1964 OS plan shows significant residential development immediately south of the site, see Figure 3e. No changes are noted within the site itself, although the Smithy to the north is no longer labelled. The school to the north is now labelled as the Johnstown County Primary School. There is some evidence of landscaping of the old colliery spoil mounds to the southwest of the site, with a large flattened mound now evident.

The 1974 OS plan again shows no significant changes on site, but a shelter is now located near the northwestern corner, see Figure 3f. A pond is present some 120m to the southwest, on land formerly shown as open fields near the colliery spoil heaps.

The 1989 plan shows a factory on site, replacing the easternmost building, Tan-y-clawdd. The separate buildings in the eastern half of the site remain in situ, see Figure 3g. The residential terraces to the west of the site have been demolished and replaced with flats.

The 1992 plan shows the school to the north had been extended towards the south, replacing the old Smithy building, see Figure 3h. The school grounds now extend up to the northern site boundary. An electrical substation is shown immediately northwest of the site, with a fuel tank adjacent.

An aerial photograph dated 2001 shows no significant changes from the 1992 OS plan evident on site, with the site clearly occupied by the factory buildings. The school playing fields can be seen adjacent to the northern and northeastern site boundaries, see Figure 3i.

The buildings on site were demolished recently.

2.4 Abandoned Mining

A Consultant's Coal Mining Report was obtained from the Coal Authority for the site. The report is presented in full in Appendix C, with the findings summarised below:

- The site is underlain by workings in the Ruabon Yard coal seam, at a depth of around 120m, last mined in 1872.
- There are no probable unrecorded shallow workings recorded.
- There are no mine entries recorded within 100m of the site boundary.

The nearest BGS Recorded Mineral Site listed in the Envirocheck Report is the Brandie Pits, 420m to the southwest.

The workings underlying the site at depth are sufficiently deep that they will pose no significant risk to the proposed development.

No shallow coal seams are anticipated to underlie the site area, and therefore, the risk posed to the proposed development from underground coal mining is considered to be low.

3.0 ENVIRONMENTAL SEARCHES

An Envirocheck report has been obtained for the site. The main points are summarised below, with the report presented in full in Appendix B.

Agency and Hydrological

- The closest active discharge consent is located 301m to the northwest, for sewage discharges to a stream or river,
- The nearest surface water feature is 122m west of the site,
- The nearest pollution incident to controlled waters was 78m southeast of the site in 1995, where an accidental spillage/leakage of natural foam caused a Category 3 minor incident,
- There are no water abstractions within 1km of the site boundary,
- The site is not at risk of flooding from rivers or seas,
- The site is not at risk from potential groundwater flooding.

Waste

- There is an historic landfill site recorded 128m west of the site, at Stryd Las, between 1993 and 1995, where deposited waste were inert waste,
- There is a licensed waste management facility recorded 201m northwest of the site at Stryd Las, for a large landfill taking non-biodegradable waste (not construction), which is listed as inactive,
- There is potentially infilled land (non-water) 196m southwest of the site.

Geological

The BGS have provided a summary of the estimated soil chemistry at the site, which is summarised below:

- Arsenic <15 mg/kg,
- Cadmium < 1.8 mg/kg,
- Chromium 60 – 90 mg/kg,
- Lead < 100 mg/kg,
- Nickel 15-30 mg/kg.

In addition, the following information was provided:

- There is a very low hazard from collapsible ground,
- There is a very low potential for landslide ground stability hazards,
- There is very low potential for running sand,
- There is very low potential for shrinking or swelling clay,

- The site is within a lower probability radon area since less than 1% of homes are estimated to be at or above the Action Level,
- Consequently, no radon protective measures are necessary.

Industrial Land Uses

- The nearest active trade directory entry is 139m to the southwest, for a tool sharpening service,
- The nearest inactive trade directory entry is for Ponciau Tyres, which formerly occupied the site,
- The nearest fuel station is 599m to the north, and is listed as “open”.

Sensitive Land Use

- Ancient woodland is recorded 399m to the southwest of the site,
- There is an SSSI and Special Area of Conservation 84m west of the site, at Stryt Las/Johnstown Newt Sites.

4.0 PROPOSED DEVELOPMENT

GH propose to develop the site, with ten detached and semi-detached residential plots, with gardens, along with a new access road off Ruabon Road. The proposed layout is presented on Figure 4.

It is proposed to raise the site levels on the western side of the site to be at a closer elevation to Ruabon Road. The floor slab levels have been compared to the existing ground levels in Table 4.1 below to assess the potential cut/fill requirements.

Table 4.1 Cut/Fill Requirements

Plot No	FFL (mAOD)	Existing GL (mAOD)	Difference (m)
1	128	127.8 – 126.9	- 0.2 – 1.1
2	128	127.8 – 127.6	-0.2 – 0.4
3	128	127.8 – 127.6	- 0.2 – 0.4
4	127	127.5 – 126.7	+0.5 - -0.3
5-6	126.75	126.4 – 126.2	-0.35 – 0.55
7	126.5	126.3 – 125.45	-0.2 – 0.95
8	126.5	126.3 – 126.3	-0.2
9-10	126.5	126.3 – 126.3	-0.2

This exercise has confirmed that on the eastern sides of Plots 1 to 3 the ground levels will have to be raised by between 0.4 and 1.10m.

Based on the findings from the initial permeability testing, an infiltration/storage basin is proposed in the southeastern corner of the site, which will attenuate storm water flows before discharge into Heol Offa.

The foundation loads are not known at this stage, however, based on experience they will be between 50 and 75kN/m/ run for two to three storey developments. Floor slab loadings are anticipated to be light, probably not exceeding 5kN/m².

The recommendations in this report are based on the above assumptions, and should be reviewed and if necessary revised during the detailed design.

5.0 PRELIMINARY CONCEPTUAL MODEL

5.1 General

According to the Contaminated Land Regulations, to determine whether there is a significant possibility of significant harm, the following should be taken into account:

“The nature and degree of harm, the susceptibility of the receptors and the timescale within which the harm might occur”.

Current good practice therefore requires that the findings from the desk study or site investigation be evaluated for contamination on a site-specific basis using a risk-based approach. Risk assessment involves identification of the hazards and evaluation of the risks associated with these hazards. Risk assessment requires an evaluation of a conceptual “source – pathway – receptor” linkage model and can be qualitative or quantitative.

The basis of an environmental risk assessment involves identifying a ‘source’ of contamination, a ‘pathway’ along which the contamination may migrate and a ‘receptor’ at risk from the contamination.

Current legislation defines the various elements of the pollution linkage as:

- A contaminant ‘source’ is a substance, which is in or under the ground and which has the potential to cause harm or to cause pollution of controlled waters.
- A ‘pathway’ is one or more routes through which a receptor is being exposed to, or affected by, a contaminant, or could be so affected.
- A ‘receptor’ is either a living organism, an ecological system, a piece of land or property, or controlled water.

A pollutant linkage indicates that all three elements have been identified. The site can only be defined as ‘Contaminated Land’ if a pollutant linkage exists and the contamination meets the criteria above.

5.2 Hazard Identification

On Site

The desk study has revealed that the site has historically been in residential use, and later used as a factory, before being used as a car/tyre sales and vehicle repair centre, with fuel tanks still visible on site, although these are above ground and bunded, with no evidence of fuel spills outside of the tank perimeter.

In addition, a chemical storage area was present in the north western section of the site, see Figure 2. However, the remaining barrels were overgrown with Ivy, and it was not possible

to determine what chemicals were stored on site, although they are likely to have been associated with paint spraying of vehicles.

Therefore, a wide range of contaminants may be present in this section of the site, which could pose a risk to the proposed development.

Off Site

The site is located in a largely residential area, with no significantly contaminative activities known to be occurring. A Smithy was historically situated north of the site, although contaminants are unlikely to have migrated significant distances due to the underlying glacial till.

An electrical substation is also situated immediately northwest of the site, together with a bunded fuel tank, although no evidence of leaks was noted during the site walkover.

The site is located in a mining area, and PAH/heavy metal contamination of shallow soils may also be anticipated.

5.3 Pathways

In relation to any on site contamination reaching potential site users, the following pathways are generally considered:

- Ingestion and skin contact with soils on site,
- Ingestion of soil/dust on homegrown vegetables,
- Inhalation from wind-blown dust,
- Leaching of contaminated materials that may affect controlled waters,
- Direct contact with contaminated material during construction.

5.4 Receptors

The potential impact of a hazard must be assessed with regard to the following target groups

- Future site users,
- Construction workers,
- Surface and groundwater, both on and off the site,
- Building materials and buried services.

5.5 Preliminary Conceptual Ground Model

Potential Contamination Sources	Potential Contaminants of Concern	Potential Pathways	Receptor Group
Made ground	Heavy metals & non-metals PAH Petroleum Hydrocarbons VOC/SVOC Asbestos	Dermal contact	Construction Workers
Hydrocarbon/fuel spills		Ingestion of soil	End Users
Metal contamination from vehicle storage/repair		Inhalation of contaminated dust	
VOC/SVOCs from body repair chemicals/paints			
Asbestos from old buildings/brake pads	PCBs	Lateral Migration and Infiltration	End Users
Electrical substation and fuel tank			Groundwater

6.0 SITE INVESTIGATIONS

6.1 Previous Site Investigation

An initial site investigation was carried out in June 2020, which comprised:

- Two machine excavated trial pits (TP01 and TP02), extended by auger to a maximum depth of 1.70m,
- Two chemical samples (0.20m in TP01 and 0.50m in TP02),
- One moisture content and Atterberg limit test (1.20m in TP01),
- Permeability testing within TP01 (augured from 1.00m to 1.70m).

TP02 was excavated to determine the extent of the retaining wall on the eastern boundary site boundary. It was not logged by GSL, and only the samples were taken for chemical testing.

The main site investigation following purchase was carried out on 29th April 2021, which comprised:

- Eight machine excavated trial pits (TP01-TP08), to a maximum depth of 2.40m,
- Samples taken for chemical testing of the made ground and glacial till.

The trial pits from both investigations were supervised and logged by an engineer from GSL in general accordance with BS 5930, Reference 2. The permeability testing was carried out in accordance with BS EN ISO 22282-2:2012, Reference 3, which involved filling the augured borehole quickly with water and monitoring the fall in water level.

Trial pits 1 to 3 were excavated close to the potential sources of contamination. However, it should be noted trial pits could not be excavated close to the sub-station, which was still active, with two live cables exiting from the substation.

The locations of the exploratory holes from both investigations are presented in Figure 2, with the logs and testing results presented in the following appendices:

- Appendix D Previous Trial Pit Logs,
- Appendix E Previous SI Soakaway Results.

6.2 Recent Investigation

Following comments from WCBC and demolition of the buildings, an additional site investigation was carried out to allow for additional testing within the building footprint and around areas of chemical/fuel storage.

This additional investigation comprised:

- Six trial pits, (TP101- TP106) to a maximum depth of 2.00m,
- One hand pit to a depth of 0.30m, next to the electrical substation,
- Additional chemical testing, targeting hydrocarbons, PCBs and Asbestos.

In addition, following demolition of the industrial building several large obstructions were encountered in the ground, which extended to depths of up to 4m. Consequently, it became necessary to drill a shell and auger borehole to a depth of 14m to bedrock to assist with pile design.

The locations of the additional site investigation holes are presented on Figure 2a, with the logs presented in Appendix F.

6.3 Laboratory Work

Physical Testing

Samples of the glacial till were taken for the following testing:

- Moisture Content
- Atterberg Limit Testing.

This testing was carried out in accordance with BS 1377:1991, Reference 4, with the results presented in Appendix G.

Chemical Testing

Samples for chemical testing were taken from the made ground and glacial till, placed in the appropriate containers and a cool box, and taken immediately to the laboratories of ALS Limited in the initial investigation, and Derwentside Environmental Testing Services (DETS) Limited for the most recent investigation for the following testing:

Metals & Non-metals - Arsenic (As), Boron (B), Cadmium (Cd), Chromium (hexavalent), Chromium (Trivalent), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Phenol, Selenium (Se), and Zinc (Zn).

Petroleum Hydrocarbons - Benzene, Toluene, Ethylbenzene, o-xylene, m-xylene, p-xylene, Aliphatics >C5 – C44, Aromatics >EC5 – EC44.

Polyaromatic Hydrocarbons (PAH) – Acenaphthene, Acenaphthylene, Anthracene, Benz (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g, h, I) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a, h) anthracene, Fluorene, Fluoranthene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene.

Other Contaminants – Sulphide (easily liberated), Water soluble Sulphate (2:1 extract), Cyanide, pH, Soil Organic Matter (SOM).

In addition, PCB tests were carried out from HP1 around the area of the electrical substation.

Asbestos testing was also carried out on all samples.

The results are summarised in Section 8.0, with the results presented in full in Appendix H.

7.0 GROUND CONDITIONS

7.1 General Stratigraphy

The ground conditions encountered in the trial pits and borehole comprised made ground overlying glacial till/glacial deposits, with mudstone bedrock at depth.

The general stratigraphy encountered is summarised in Table 7.1 below:

TP Ref	Made Ground (m)	Glacial Till (m)	Glacial Deposits (m)	Mudstone Bedrock (m)
TP01	0.00-0.80	1.00-2.30	0.80 – 1.00	
TP02	0.00-0.70	0.70-1.20		
TP03	0.00-0.90	1.20-1.90		
TP04	0.00-0.90	0.90-1.50		
TP05	0.00-0.30	0.30-2.30		
TP06	0.00-0.40	0.40-1.50	1.50-1.90	
TP07	0.00-1.00	1.00-1.20		
TP08	0.00-0.60	0.60-1.50 1.80-2.40	1.50-1.80	
TP A	0.00 – 1.00	1.00 – 1.70		
HP1	0.00-0.40			
TP101	0.00-0.85	0.85-1.40		
TP102	0.00-0.40	0.40-1.10	1.10-2.00	
TP103	0.00-0.30	0.30-1.70		
TP104	0.00-0.60	0.60-1.30		
TP105	0.00-1.00	1.00-1.70		
TP106	0.00-1.00	1.00-1.40		
BH01	0.00-1.10	2.30-13.70	1.10-2.30	13.70 – 14.0

TP in italics from previous site investigation

7.2 Made Ground

The made ground was variable across the site, with the unsurfaced areas in the northwest section of the site underlain by medium dense, blackish red, gravelly sand, with occasional ash and clinker recorded. Beneath hard standing areas, the made ground generally comprised dense, grey, subangular to angular, fine to coarse gravel of asphalt. It appears from several of the trial pits that the hardstanding areas have been raised in the past, with previous tarmac layers observed in the trial pits.

pH values were between 7.1 and 7.4, with the water-soluble sulphate values (at 2:1 extract) between 0.017 and 0.165 g/l.

7.3 Glacial Till

Glacial till was encountered across the site and generally comprised firm, light brown mottled grey, slightly sandy, gravelly clay, with the gravel being subrounded to subangular, fine to coarse. However, the glacial till appears to have an upper weathered layer, which became stiff with depth, as the clay became unweathered.

SPT “N” values in the till ranged from 6 at surface to greater than 17 below a depth of 3m, and generally increasing with depth.

Atterberg limit testing recorded liquid limits between 25 and 48%, plastic limits between 16 and 26%, and plasticity indexes between 9 and 26%, indicating a low to intermediate plasticity clay. Natural moisture contents were between 19 and 16%.

pH values were between 8.1 and 8.4, with the water-soluble sulphate values (at 2:1 extract) between 0.014 and 0.016 mg/l.

7.4 Glacial Deposits

Thin layers of sand were encountered either on top of, or within the glacial till, and were described as loose, brown, slightly gravelly sand. In TP06 and TP08, groundwater was encountered in these deposits, leading to “running sand” conditions.

One SPT in the glacial deposits recorded an “N” value of 8, confirming a loose consistency.

7.5 Weathered Bedrock

Weathered bedrock was encountered at a depth of 13.70m in BH 1, where it was described as stiff, grey/ purple, slightly gravelly, sandy clay, with the gravel being angular to sub rounded fine to coarse of mudstone and sandstone.

An SPT in the bedrock refused with a value greater than 50.

7.6 Groundwater

In TP 01 and TP 05 slight seepages were observed in the glacial till between depths of 1.50 and 1.90m. Groundwater was also encountered in BH01 at a depth of 5.1m and 6.0m, and after 20 minutes, the water level had risen to 4.1m.

7.6 Permeability Testing

Permeability testing was carried out in TP01 within the glacial till from the initial investigation (June 2020). Over a monitoring period of 100 minutes, only a drop of 1cm in water level was recorded, see Appendix E. Therefore, it was not possible to calculate a permeability.

8.0 CHEMICAL TESTING RESULTS

Soil samples were taken from the made ground and glacial till, with the sample depths presented in Table 8.1 below:

Table 8.1: Sample details

TP No	Depth (m)	Strata
TP A (initial SI)	0.10	Made Ground
TP B (initial SI)	0.50	Made Ground
TP01 (Just Hydrocarbons)	2.00	Glacial Till
TP02	0.20	Made Ground
TP03	0.20	Made Ground
TP06	0.10	Made ground
HP1 (additional PCB Test)	0.30	Made Ground
TP101	0.50	Made Ground
TP102	0.10	Made Ground
TP104	0.30	Made Ground
TP106	0.20	Made Ground

The results of the soil analyses are presented below, where they have been compared to suitable generic assessment criteria (GACs), in order to allow a generic quantitative risk assessment (GQRA) to be carried out for the site and the proposed development.

The Category 4 Screening Levels (C4SLs) published by DEFRA (2014) have been adopted in the first instance, which have been published for six substances to date. Where a C4SL is unavailable, the “Suitable 4 Use Levels” (S4ULs) published by LQM/CIEH (2015) have been adopted.

These criteria have been derived using the CLEA model for a range of standard end-use scenarios and a range of soil organic matter (SOM) contents. It should be noted that the C4SL values are derived on the basis of a “low level of toxicological concern”, while the S4UL values are based on a “tolerable” or “minimal” level of risk. As such, the S4ULs describe a lower level of risk than the C4SLs, and are equivalent to the former Soil Guideline Values (SGVs, published by the Environment Agency) and the previous editions of the LQM/CIEH GAC values.

A “residential with gardens” end-use has been adopted for this analysis, based on the most-conservative SOM content of 1.0%.

Note: the S4UL values presented below are Copyright Land Quality Management Limited, reproduced with permission; Publication Number S4UL3668. All rights reserved.

Initial Site Investigation Chemical Results:

	TP A	TP B	Adopted Guideline (mg/kg)	Source	Exceedances
	0.2	0.5			
Metals & Non-Metals					
Arsenic	8.94	8.63	37	C4SL	0
Boron	14.1	5.82	290	S4UL	0
Cadmium	0.541	0.734	22	C4SL	0
Chromium, Trivalent	<0.9	8.25	910	S4UL	0
Chromium, Hexavalent	<0.6	<0.6	21	C4SL	0
Copper	45.5	30.7	2400	S4UL	0
Lead	63.4	118	200	C4SL	0
Mercury	<0.14	<0.14	1.2	S4UL	0
Nickel	29.8	23.8	130	S4UL	0
Phenol	<0.01	<0.01	120	S4UL	0
Selenium	<1	<1	250	S4UL	0
Zinc	236	242	3700	S4UL	0

No values exceeded the guidance values for residential use with gardens.

	TP01	TP02	Adopted Guideline (mg/kg)	Source	Exceedances
	0.2	0.5			
Petroleum Hydrocarbons					
Benzene	<0.18	<0.18	0.87	C4SL	0
Toluene	<0.14	<0.14	130	S4UL	0
Ethylbenzene	<0.08	<0.08	47	S4UL	0
o-xylene	<0.2	<0.2	60	S4UL	0
Aliphatics >C5-C6	<0.01	<0.01	42	S4UL	0
Aliphatics >C6-C8	0.036	<0.01	100	S4UL	0
Aliphatics >C8-C10	0.277	<0.01	27	S4UL	0
Aliphatics >C10-C12	<1	<1	130	S4UL	0
Aliphatics >C12-C16	1.09	<1	1100	S4UL	0
Aliphatics >C16-C35	4.1	<1	65000	S4UL	0
Aliphatics >C35-C44	<1	<1	65000	S4UL	0
Aromatics >EC5-EC7	<0.01	<0.01	70	S4UL	0
Aromatics >EC7-EC8	<0.01	<0.01	130	S4UL	0
Aromatics >EC8-EC10	0.184	<0.01	34	S4UL	0
Aromatics >EC35-EC44	<1	<1	1100	S4UL	0

No values exceeded the guidance values for residential use with gardens.

Polyaromatic Hydrocarbons (PAH)	TP01	TP02	Adopted Guideline (mg/kg)	Source	Exceedances
	0.2	0.5			
Acenaphthene	<0.008	<0.008	210	S4UL	0
Acenaphthylene	<0.012	<0.012	170	S4UL	0
Anthracene	<0.016	0.0259	2400	S4UL	0
Benz(a)anthracene	0.0403	0.159	7.2	S4UL	0
Benzo(a)pyrene	0.0322	0.148	5	C4SL	0
Benzo(b)fluoranthene	0.0609	0.268	2.6	S4UL	0
Benzo(g,h,i)perylene	0.0384	0.129	320	S4UL	0
Benzo(k)fluoranthene	0.0173	0.0621	77	S4UL	0
Chrysene	0.0508	0.173	15	S4UL	0
Dibenzo(a,h)anthracene	<0.023	<0.023	0.24	S4UL	0
Fluoranthene	0.0447	0.254	280	S4UL	0
Fluorene	<0.01	<0.01	170	S4UL	0
Indeno(1,2,3-cd)pyrene	0.0269	0.132	27	S4UL	0
Naphthalene	0.0906	0.0256	2.3	S4UL	0
Phenanthrene	0.16	0.111	95	S4UL	0
Pyrene	0.0416	0.245	620	S4UL	0

No values exceeded the guidance values for residential use with gardens.

Other Contaminants / Testing	TP01	TP02	Adopted Guideline (mg/kg)	Source	Exceedances
	0.2	0.5			
Soil Organic Matter (SOM)	13.4	9.6	-	-	-
pH	8.53	8.52	-	-	-
Sulphide, Easily liberated	290	73.7	-	-	-
Cyanide, Total	<1	<1	-	-	-
Water Soluble Sulphate as SO ₄ 2:1 Extract	0.165	0.0206	-	-	-
p/m-Xylene	<0.2	<0.2	56	S4UL	0

None of the above values cause any concern.

No asbestos was recorded in either of the samples.

	TP02	TP03	TP06			
	0.20	0.20	0.10	Adopted Guideline (mg/kg)	Source	Exceedances
Metals & Non-Metals						
Arsenic	15	5.5	0.9	37	C4SL	0
Boron	0.6	< 0.2	< 0.2	290	S4UL	0
Cadmium	0.8	0.2	0.4	22	C4SL	0
Chromium, Trivalent	17	7.2	3	910	S4UL	0
Chromium, Hexavalent	< 1.0	< 1.0	< 1.0	21	C4SL	0
Copper	52	25	7.3	2400	S4UL	0
Lead	140	38	12	200	C4SL	0
Mercury	0.16	< 0.05	< 0.05	1.2	S4UL	0
Nickel	19	12	2.9	130	S4UL	0
Phenol	0.7	< 0.3	0.3	120	S4UL	0
Selenium	< 0.5	< 0.5	0.6	250	S4UL	0
Zinc	180	51	20	3700	S4UL	0

No values exceeded the guidance values for residential use with gardens.

	TP01	TP02	TP03	TP06			
	2.00	0.20	0.20	0.10	Adopted Guideline (mg/kg)	Source	Exceedances
Petroleum Hydrocarbons							
Aliphatics >C5-C6	< 0.01	< 0.01	< 0.01	< 0.01	42	S4UL	0
Aliphatics >C6-C8	< 0.01	< 0.01	< 0.01	< 0.01	100	S4UL	0
Aliphatics >C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	27	S4UL	0
Aliphatics >C10-C12	< 1.5	< 1.5	< 1.5	< 1.5	130	S4UL	0
Aliphatics >C12-C16	< 1.2	< 1.2	< 1.2	< 1.2	1100	S4UL	0
Aliphatics >C16-C35	< 4.9	< 4.9	< 4.9	< 4.9	65000	S4UL	0
Aromatics >EC5-EC7	< 0.01	< 0.01	< 0.01	< 0.01	70	S4UL	0
Aromatics >EC7-EC8	< 0.01	< 0.01	< 0.01	< 0.01	130	S4UL	0
Aromatics >EC8-EC10	< 0.01	< 0.01	< 0.01	< 0.01	34	S4UL	0
Aromatics >EC10-EC12	< 0.9	< 0.9	< 0.9	< 0.9	74	S4UL	0
Aromatics >EC12-EC16	< 0.5	< 0.5	< 0.5	< 0.5	140	S4UL	0
Aromatics >EC16-EC21	< 0.6	< 0.6	< 0.6	< 0.6	260	S4UL	0
Aromatics >EC21-EC35	< 1.4	< 1.4	< 1.4	< 1.4	1100	S4UL	0
Aromatics >EC35-EC44	-	< 1.4	< 1.4	< 1.4	1100	S4UL	0

No values exceeded the guidance values for residential use with gardens.

	TP02	TP03	TP06			
Polyaromatic Hydrocarbons (PAH)	0.20	0.20	0.10	Adopted Guideline (mg/kg)	Source	Exceedances
Acenaphthene	< 0.03	0.24	< 0.03	210	S4UL	0
Acenaphthylene	< 0.03	0.26	< 0.03	170	S4UL	0
Anthracene	< 0.03	0.91	< 0.03	2400	S4UL	0
Benz(a)anthracene	0.25	0.84	< 0.03	7.2	S4UL	0
Benzo(a)pyrene	0.12	0.36	< 0.03	5	C4SL	0
Benzo(b)fluoranthene	0.22	0.49	< 0.03	2.6	S4UL	0
Benzo(g,h,i)perylene	0.09	0.17	< 0.03	320	S4UL	0
Benzo(k)fluoranthene	0.09	0.19	< 0.03	77	S4UL	0
Chrysene	0.2	0.74	< 0.03	15	S4UL	0
Dibenzo(a,h)anthracene	0.04	0.06	< 0.03	0.24	S4UL	0
Fluoranthene	0.42	3.4	< 0.03	280	S4UL	0
Fluorene	< 0.03	0.69	< 0.03	170	S4UL	0
Indeno(1,2,3-cd)pyrene	0.09	0.16	0.04	27	S4UL	0
Naphthalene	< 0.03	0.1	< 0.03	2.3	S4UL	0
Phenanthrene	0.16	5.6	< 0.03	95	S4UL	0
Pyrene	0.39	2.8	< 0.03	620	S4UL	0

No values exceeded the guidance values for residential use with gardens.

	TP02	TP03	TP06
Other Contaminants / Testing	0.20	0.20	0.10
Soil Organic Matter (SOM)	4.7	1.4	0.4
pH	7.1	7.4	8.9
Sulphide, Easily liberated	110	16	36
Cyanide, Total	0.3	0.1	< 0.1
Total Sulphur (ASB)	< 0.75	< 0.75	< 0.75
Water Soluble Sulphate as SO ₄ 2:1 Extract	52	17	< 10

None of the above values cause any concern.

However, loose bundles of Chrysolite Asbestos were detected in TP06, which was subjected to quantification testing, recording a value of 0.14%.

Additional Site Investigation Test Results

For the additional testing, PCB testing was carried out on HP1. Full chemical testing was carried out on the rest of the samples.

Metals & Non-Metals	TP06	TP04	TP01	TP02	HP1	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.30	0.50	0.10	0.30			
Arsenic	4	5.30	11	7.1	15	170	C4SL	0
Boron, Water Soluble	< 0.2	0.40	0.40	0.2	0.5	46000	S4UL	0
Cadmium	1.1	0.70	0.90	0.4	1.4	880	C4SL	0
Chromium III	6.3	8.90	14	9.5	19	33000	S4UL	0
Chromium, Hexavalent	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	250	C4SL	0
Copper	12	18	33	29	74	44000	S4UL	0
Lead	73	65	120	70	150	1300	C4SL	0
Mercury	< 0.05	0.06	0.18	0.07	0.23	30	S4UL	0
Nickel	7.3	10	16	13	24	800	S4UL	0
Phenol - Monohydric	< 0.3	< 0.3	< 0.3	< 0.3	0.5	690	S4UL	0
Selenium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1800	S4UL	0
Zinc	86	110	140	150	290	170000	S4UL	0

No values exceeded the guidance values for residential use with gardens.

Petroleum Hydrocarbons	TP06	TP04	TP01	TP02	HP1	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.30	0.50	0.10	0.30			
Aliphatic C5-C6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	130000	S4UL	0
Aliphatic C6-C8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	220000	S4UL	0
Aliphatic C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	18000	S4UL	0
Aliphatic C10-C12	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	23000	S4UL	0
Aliphatic C12-C16	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	25000	S4UL	0
Aliphatic C16-C21	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	480000	S4UL	0
Aliphatic C21-C35	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	480000	S4UL	0
Aliphatic C35-C40	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	84000	S4UL	0
Aromatic C5-C7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	95000	S4UL	0
Aromatic C7-C8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	8500	S4UL	0
Aromatic C8-C10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	9700	S4UL	0
Aromatic C10-C12	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	10000	S4UL	0
Aromatic C12-C16	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	7700	S4UL	0
Aromatic C16-C21	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	7800	S4UL	0
Aromatic C21-C35	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	7800	S4UL	0

No values exceeded the guidance values for residential with gardens.

Polyaromatic Hydrocarbons (PAH)	TP06	TP04	TP01	TP02	HP1	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.30	0.50	0.10	0.30			
Acenaphthene	< 0.03	< 0.03	< 0.03	< 0.03	0.04	30000	S4UL	0
Acenaphthylene	0.11	< 0.03	< 0.03	< 0.03	0.04	30000	S4UL	0
Anthracene	< 0.03	< 0.03	< 0.03	< 0.03	0.14	150000	S4UL	0
Benzo(a)anthracene	< 0.03	< 0.03	< 0.03	0.03	1	56	S4UL	0
Benzo(a)pyrene	< 0.03	< 0.03	< 0.03	< 0.03	0.98	21	C4SL	0
Benzo(b)fluoranthene	< 0.03	< 0.03	< 0.03	0.03	1.4	15	S4UL	0
Benzo(g,h,i)perylene	< 0.03	< 0.03	< 0.03	< 0.03	0.7	1500	S4UL	0
Benzo(k)fluoranthene	< 0.03	< 0.03	< 0.03	< 0.03	0.58	410	S4UL	0
Chrysene	< 0.03	< 0.03	< 0.03	0.05	1.3	110	S4UL	0
Dibenzo(a,h)anthracene	< 0.03	< 0.03	< 0.03	< 0.03	0.17	1.3	S4UL	0
Fluoranthene	< 0.03	0.03	< 0.03	0.07	2.7	6300	S4UL	0
Fluorene	0.05	< 0.03	< 0.03	< 0.03	< 0.03	20000	S4UL	0
Indeno(1,2,3-c,d)pyrene	< 0.03	< 0.03	< 0.03	< 0.03	0.59	170	S4UL	0
Naphthalene	0.03	< 0.03	< 0.03	< 0.03	0.05	1900	S4UL	0
Phenanthrene	< 0.03	< 0.03	< 0.03	< 0.03	0.82	6200	S4UL	0
Pyrene	< 0.03	0.03	< 0.03	0.07	2.4	15000	S4UL	0

None of the values exceeded guidance values for residential with gardens.

Other Contaminants / Testing	TP06	TP04	TP01	TP02	HP1	Adopted Guideline (mg/kg)	Source	Exceedances
	0.20	0.30	0.50	0.10	0.30			
Organic matter	0.4	0.70	0.20	1.8	4.9	-	-	-
pH	8.2	9.90	7.60	7.9	7.8	-	-	-
Sulphide	< 10	39.00	47.00	62	210	-	-	-
Cyanide, Total	< 0.1	< 0.1	0.30	0.2	0.4	-	-	-
Sulphur (free)	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	-	-	-
Sulphate Aqueous Extract as SO ₄	50	240.00	140.00	28	30	-	-	-

None of the above values cause any concern.

In addition, no PCBs were detected in HP1.

9.0 UPDATED CONCEPTUAL MODEL AND RISK ASSESSMENT

9.1 Hazard Identification

On Site

The desk study and preliminary ground model revealed that the site has historically been in residential use, and later used as a factory, before being used as a car/tyre sales and vehicle repair centre, with the above ground bunded fuel tanks still present on site, although they haven't been used for a considerable time based on their condition. In addition, a live electricity substation is present in the north western corner of the site. However, there wasn't any evidence of any surface fuel spillages in this area.

The bunded fuel tanks have been removed during the demolition works and TP101, excavated at their location, failed to reveal any visual or olfactory evidence of any hydrocarbon contamination, which was confirmed by the subsequent testing. In addition, no pipes leading from the tanks were encountered during their removal.

Also, a hand excavated trial pit adjacent to the sub-station failed to encounter any visual or olfactory evidence of contamination, which again was confirmed by the chemical testing.

It was not possible to excavate below the chemical storage area, which was still on site during the investigation. However, this has recently been removed, and samples taken from this area, which will be reported to the Local Authority in due course.

No visual or olfactory evidence of contamination was revealed in any of the trial pits apart from TP01, where there was a hydrocarbon odour and oily sheen within the glacial till at a depth of 2.00m.

However, the chemical testing results failed to record any exceedances of contaminants when compared to the strictest end use of Residential with Gardens at 1% SOM. A small amount of asbestos was identified in TP06 which was quantified at 0.14%. Further testing in this area failed to encounter any asbestos in the made ground. However, it should be noted that in this area large areas were excavated and processed through the crusher due to excessive concrete obstructions in the ground, see Figure 5.

Previous buildings on site have also been demolished, which had cement asbestos sheet roofing. The dockets confirming their removal from site by a suitably qualified contractor will be forwarded to the Local Authority in due course.

Off Site

The desk study and preliminary model revealed that the site is located in a largely residential area, with no significantly contaminative activities known to be occurring.

No evidence of contamination related to offsite sources was identified during the investigation.

9.2 Updated Conceptual Model

Potential Contamination Sources	Potential Contaminants of Concern	Potential Pathways	Receptor Group
Made ground	Heavy metals & non-metals	Dermal contact	Construction Workers
Hydrocarbon/fuel spills		Ingestion of soil	End Users
Metal contamination from vehicle storage/repair	PAH	Inhalation of contaminated dust	
VOC/SVOCs from body repair chemicals/paints	Petroleum Hydrocarbons	Lateral Migration and Infiltration	End Users Groundwater
Asbestos from old buildings/brake pads	VOC/SVOC		
Electrical substation and fuel tank	Asbestos		
	PCBs		

9.3 Pathways

In relation to any onsite contamination reaching potential site users, the following pathways are generally considered for this type of development:

- Ingestion and skin contact with soils on site,
- Ingestion of home-grown vegetables,
- Inhalation of wind-blown dust, gas or vapors,
- Leaching of contaminated materials that may affect controlled waters,

- Direct contact with contaminated materials during construction.

9.4 Receptors

The potential impact of a hazard must be assessed with regard to the following target groups:

- Future site uses,
- Construction workers,
- Surface and groundwater,
- Nearby vegetation,
- Ground Gases
- Building materials and buried services.

9.5 Future Site Users Risk Assessment

The site is to be developed with ten residential properties, including parking facilities and gardens, and is therefore a sensitive end use.

The desk study identified the historical uses as a vehicle maintenance, fuel tanks, electricity substation, asbestos, and made ground as the potential sources of contamination.

Visual evidence of hydrocarbon contamination was only observed in the glacial till at a depth of 2.00m in TP01. However, testing proved this material to be below the relevant guidance values. Furthermore, this pit was excavated in an area where ground levels are to be raised, therefore mitigating any risk of residual contamination.

No visual or olfactory evidence of contamination was encountered in any of the other pits, although ash and clinker was observed, which would normally contain slightly elevated heavy metals and PAH. However, the chemical testing has failed to reveal any evidence of contamination above the relevant guidelines.

Asbestos was detected in the northeastern corner of the site, although these were very low (0.14%) and not considered to present a risk, if covered by a building/ hardstandings or a suitable thickness of inert material. In addition, additional testing in this area failed to encounter any further asbestos.

In conclusion, the site is only around 300m² in area, and ten chemical samples have failed to reveal any contamination levels above the relevant residential guidance levels and the potential sources of contamination have been removed. Therefore, the site is considered to be suitable for its intended end use.

However, in accordance with current good practice, a watching brief should be kept on all excavations, any contamination encountered should be excavated, stored safely on site, tested, and disposed of at a suitably licensed landfill facility.

9.6 Construction Workers

The risk to construction worker is considered to be very low; and can be catered for by appropriate PPE and washing facilities in accordance with current good practice.

9.7 Controlled Waters Risk Assessment

When considering the risk to controlled waters, both surface waters and any underlying aquifers need to be considered.

In this case, due to the lack of contamination on site, in conjunction with the absence of any nearby water courses, the risk to surface waters is considered to be negligible.

In addition, the underlying aquifer will have been contaminated by historic coal mining activities, ensuring the site does not present a risk to the underlying aquifer.

9.8 Ground Gases

No sources of ground gases have been identified during the desk study, or site investigation works. Therefore, there is considered to be a negligible risk to the development from ground gas.

In addition, the site is in an area where radon measures are not required. Therefore, no gas protection measures are required for the development.

9.9 Building Materials

The investigation has not revealed any contamination that could adversely affect building materials or services, although this should be checked with the statutory suppliers, who should be supplied with the laboratory test results.

9.10 Vegetation

There is currently no topsoil on site that needs to be removed, and there is no evidence of any risks to existing vegetation on site, which has been confirmed by the chemical test results.

9.11 Remediation Strategy

The site currently does not have any topsoil on site that could be used. Therefore, all topsoil will need to be imported. Prior to import, the topsoil should be tested to ensure it is suitable to be included within the works.

Additional testing has been undertaken beneath the chemical storage area, and the results will be forwarded to the Local Authority on receipt. However, it should be noted that ground levels are to be raised in the garden areas of Plots 1 to 3, which will provide sufficient cover to address any residual risks.

Finally, asbestos sheet cladding has been removed from several of the demolished buildings on site. The certification proving it has been taken off site by a suitably qualified contractor to a suitably licensed landfill facility will be forwarded shortly to the Local Authority.

10.0 GEOTECHNICAL RECOMMENDATIONS

10.1 Excavations and Site Preparation

To assist with the geotechnical recommendations, and planning the site works, a geotechnical constraints drawing has been produced, see Figure 5. This shows the location of the proposed plots in conjunction with the location of the existing buildings on site.

The existing buildings and hardstandings on site, along with the concrete floor slabs, and existing foundation where they interfere with new foundation, have now been demolished, see Figure 5.

During demolition several large foundations and an old basement were encountered and these have also been broken out to depths of around 4.5m. In addition, the demolition and additional trial pits confirmed the general thickness of made ground beneath the building to be between 1.3 and 2.0m thick. In hindsight, it would have probably been necessary to raise ground levels in this area to create an operational yard for the building when it was constructed.

The concrete and brickwork has been crushed on site to form a suitable structural fill (6F2). It would be prudent to estimate the volumes of structural fill created to ensure a cut/fill balance with the area that needs to be raised on the western section of the site.

There are also several trees that will need to be removed, although it is understood that the mature tree on the south western corner of the site is subject to a preservation order.

Following felling all roots should be grubbed out with any resulting excavations backfilled with suitable well compacted granular material. It is also possible that in the north western section of the site that further roots from previous trees may be encountered.

Prior to filling in the western section of the site a firm formation should be established, which should be proof rolled and any loose/soft areas further excavated and replaced with well compacted granular material. Prior to filling any old service runs will also need to be excavated with the resulting excavations backfilled as described above.

The elevations for the excavation for the storm water attenuation pond have not been set, but are anticipated to be several metres deep. Several of the trial pits encountered running sands, which if encountered in this excavation could lead to ground instability adjacent to the foundations of Plot 10. Therefore, additional trial pits will be required in this area to determine if running sands is an issue.

Excavation that are to be entered should be battered back or shored for safety reason.

Slight groundwater seepages may be encountered in excavations, which should easily be catered for by pumping from sumps cut within the excavation.

10.2 Foundation and Floor Slab

As the ground conditions for Plots 1 to 4 comprise glacial till at fairly shallow depth, then conventional spread foundations are recommended for the development founded in the underlying clay to at least firm consistency, where an allowable bearing pressure of 75kN/m² can be used.

Floor slabs will have to be suspended due to the thickness of made ground to comply with NHBC guidelines, Reference 5.

An alternative for these plots, if the ground levels are to be raised is to construct a raft foundation on the well compacted granular material used to raise ground levels. However, this would first involve excavating the existing made ground, and proof rolling the formation before commencing filling. Any soft/loose areas identified should be further excavated, typically an additional 300mm, and backfilled with suitable well compacted granular material.

For Plots 5 to 10, where the made ground has been proven to be unusually deep and where deep concrete obstructions were encountered, two foundation options have been considered, as the resulting excavations during demolition had been backfilled with loose 6F2 material from the stockpile.

Option 1

Excavate the loose backfilled crushed material and compact in accordance with an approved earthworks specification. However, this would have entailed widening the excavation to extend beneath the plots, where a 2m thickness of granular material would need to be placed, extending 1m outside of the building footprint.

This would involve substantial amounts of earthworks, with the plots then founded on a raft foundation.

Option 2

This would be to pile Plots 5 to 10.

Whilst all types of pile type would be suitable. The most appropriate and cost-effective solution is considered to be driven pre-cast piles, probable around 200mm² in diameter and driven to refusal in the bedrock, where sufficient working loads will be easily obtainable.

These types of pile have the main advantage in that no spoil is generated, and the piles are brought to site in short lengths.

The only real disadvantage is the noise and vibration caused, however, vibration is not considered to be an issue based on the lack of nearby properties. In addition, the noise will only last a short time as the piles will be quickly installed. However, it may be prudent to undertake the piling in the school holidays.

There are several mature trees on site, which are to remain. These should be identified and an assessment carried on the required foundation depth in accordance with the NHBC guidance on trees assuming a clay of medium volume change potential, Reference 5. However, this will not need to be undertaken for Plots 5 to 10, which are to be piled.

10.3 Re Use of Materials and Value Engineering

There isn't any topsoil on site that could be re used. However, the existing buildings have been crushed to form a structural fill, which can be used to raise the levels in the western section of the site, and also capping for road construction.

In addition, as it will be necessary to provide topsoil for the garden's, consideration could be given to using glacial till from foundation excavations and excavations for the attenuation pond to raise garden levels, which will then need to be capped with clean imported topsoil.

Any excavated glacial till could also be used for lining the attenuation basin should sands be encountered.

10.4 Access Roads and Hardstandings

No California Bearing Ratio (CBR) tests were undertaken as part of this investigation.

However, the entrance to the site is to be raised and CBR values will not be an issue. Elsewhere, formations will be in made ground, where several options exist, as follows:

- Excavate the made ground, and replace it with well compacted 6F2 material, which would be ideal as a capping medium,
- Excavate and recompact the made ground.

In addition, the access road passes over the root area of the tree at the entrance, which is to remain. Therefore, it is likely that some form of root protection may be required.

10.5 Protection of Buried Concrete

The chemical testing has confirmed that chemical attack of buried concrete is not an issue.

Therefore, buried concrete can be designed in accordance with the following classes in accordance with Reference 6.

- AC – 1,
- DS – 1.

10.6 Landfill and Radon Gas

The desk study has failed to reveal any nearby landfills and mine gas and gas from made ground is not considered to be an issue.

In addition, no radon protection measures are necessary.

10.7 Drainage

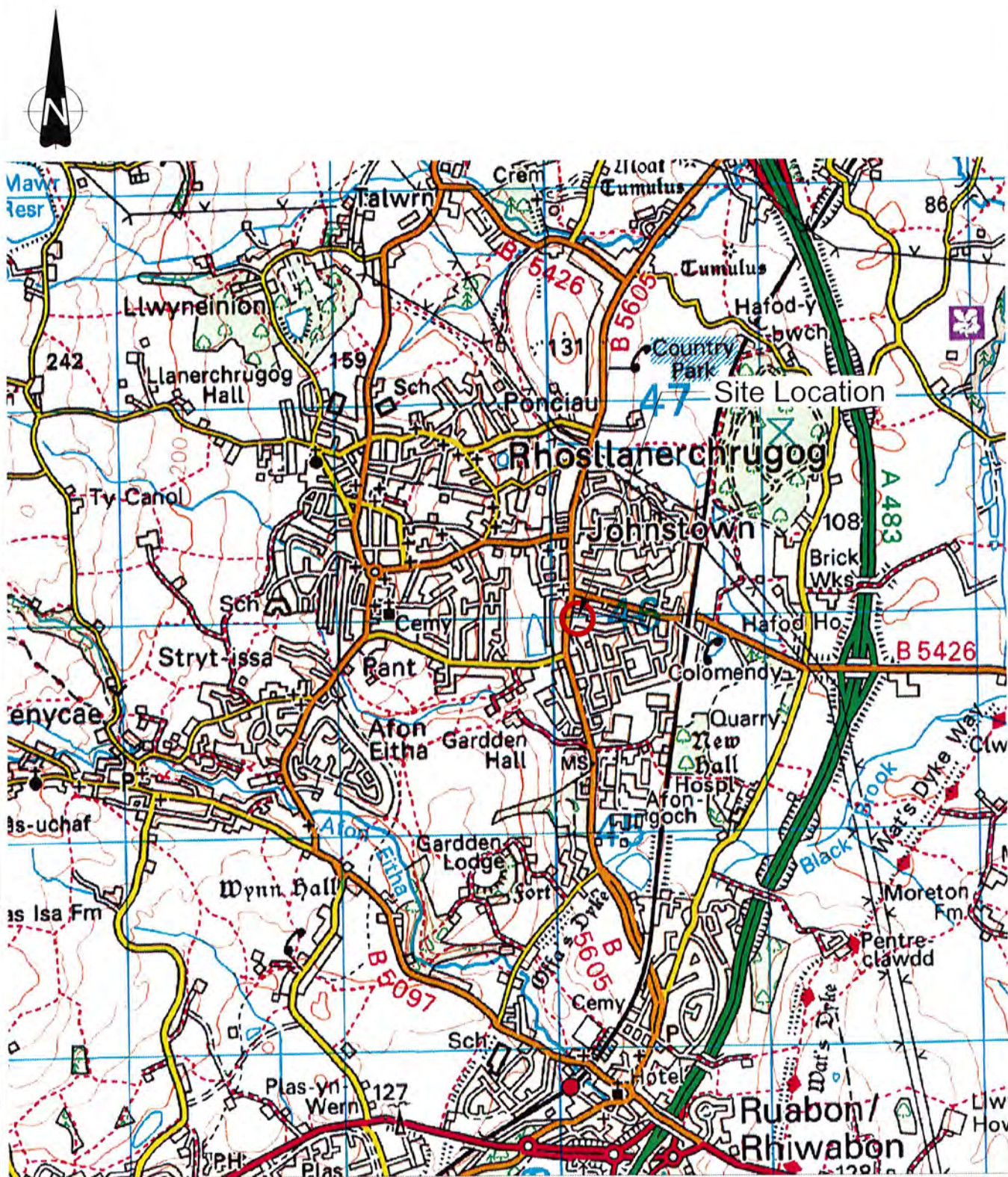
The site investigation has confirmed the site to be underlain by low permeability glacial till (clay). The low permeability of the clay was confirmed during the initial site investigation. In addition, whilst isolated pockets of sand were encountered near surface, they were generally saturated.

Therefore, it was concluded that the site wasn't suitable for soakaway drainage, and the storm water is to be attenuated before discharge into Heol Offa.

REFERENCES

1. The geology of the country around Wrexham. British Geological Survey, 1927.
2. BS 5930:2015, Code of Practice for Site Investigation
3. BS EN ISO 22282-2:2012 Geotechnical investigation and testing. Geohydraulic testing. Water permeability tests in a borehole using open systems.
4. BS 1377:1991, British Standard Methods of Tests for Soils for Civil engineering Purposes.
5. NHBC Standards, Part 4 Foundations, 2007.
6. BRE Special Digest 1, 2005, Concrete in Aggressive Ground.

FIGURES



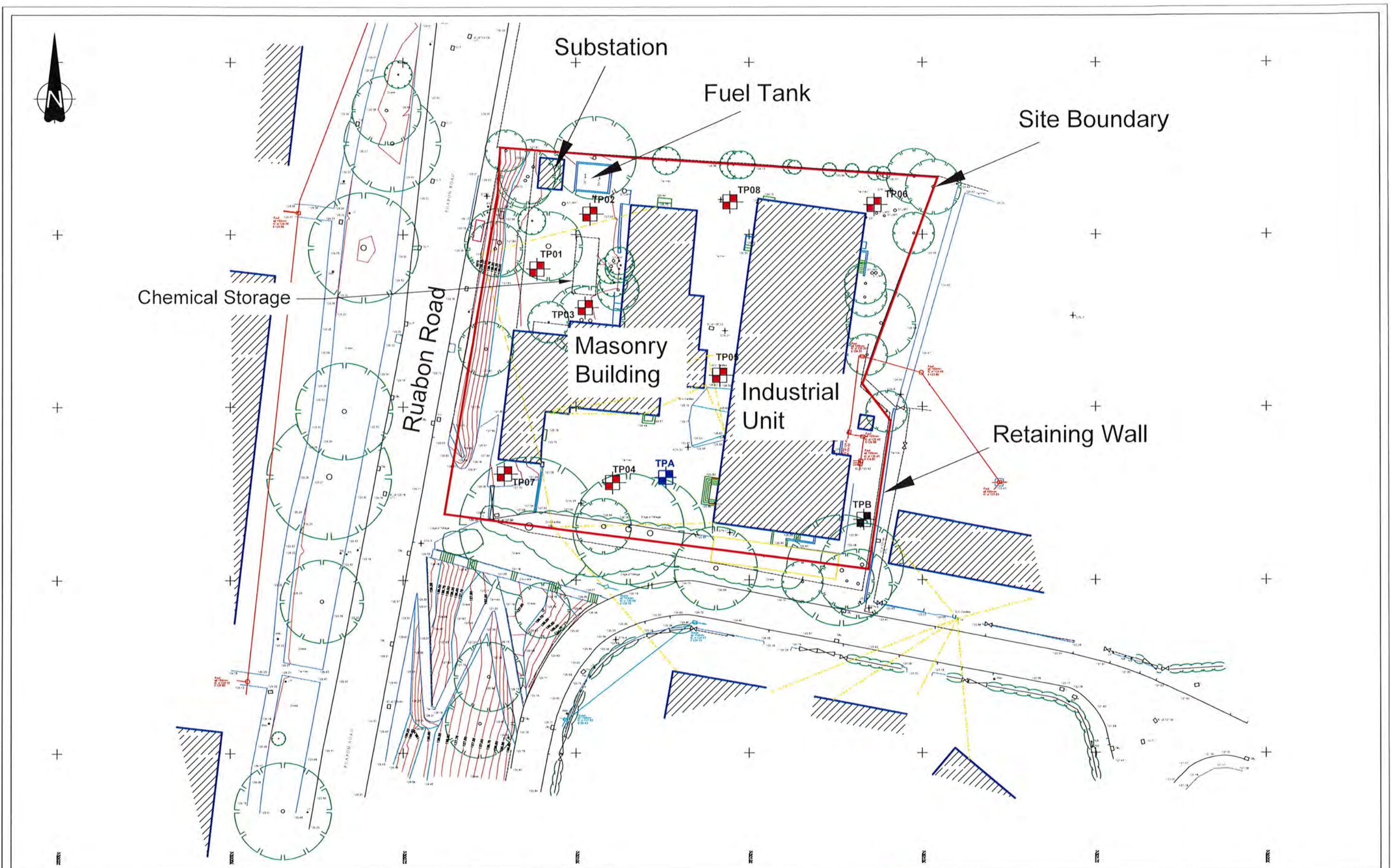
OS LICENSE No. 100030802

SCALE 1:25,000 @ A4

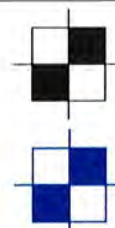
Figure Title

SITE LOCATION

FIGURE 1

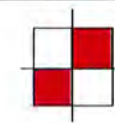


SCALE 1:500 @ A3



Trial pit- Previous SI

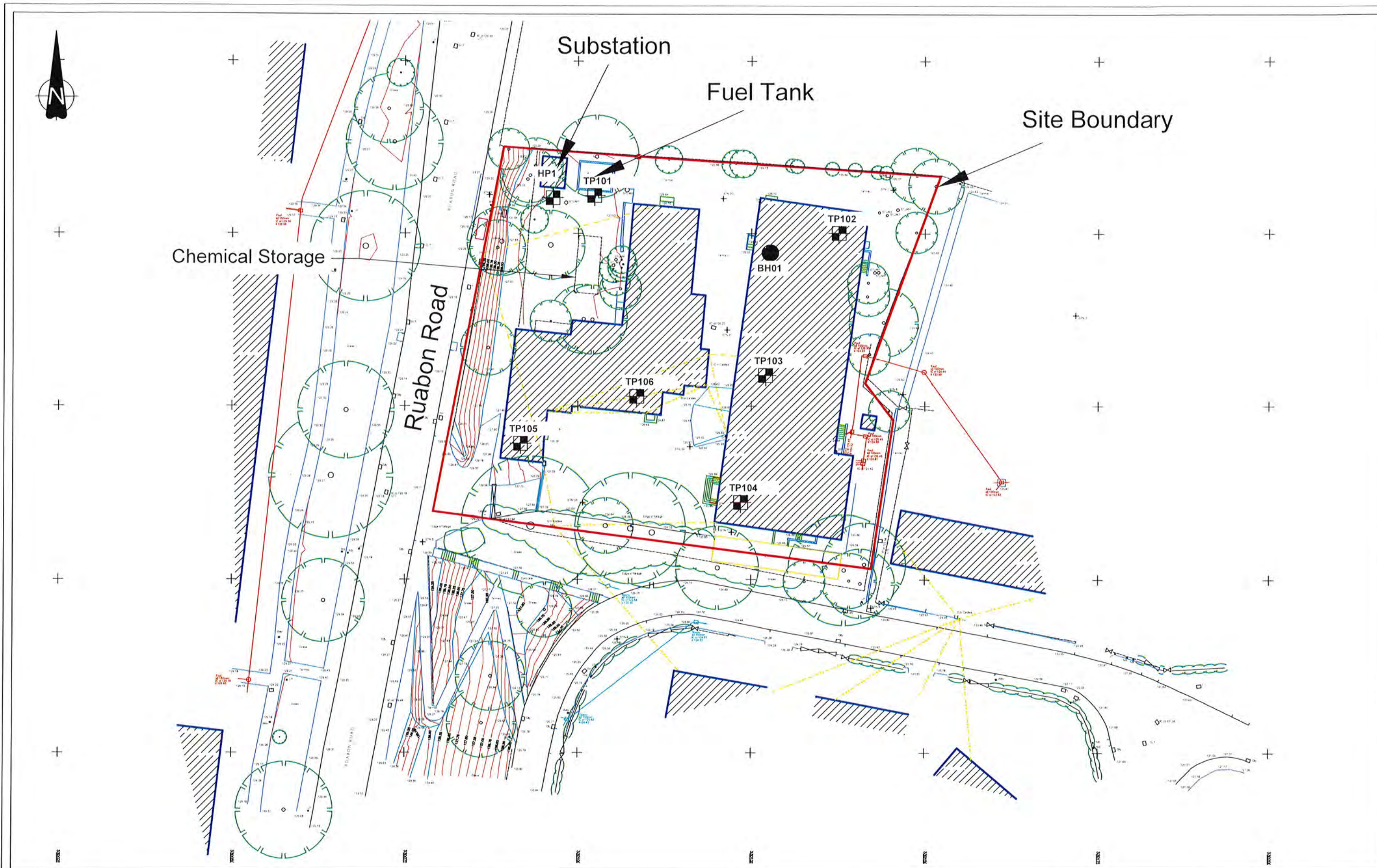
Trial pit with permeability testing - Previous SI



Trial pit- Recent SI

Figure Title
Site Layout
& Exploratory Hole Locations

FIGURE 2



SCALE 1:500 @ A3

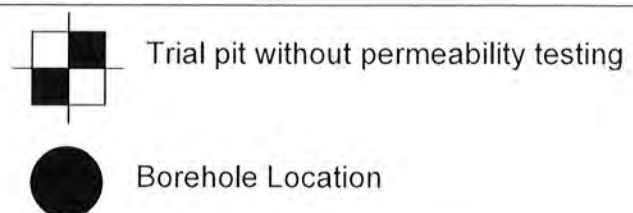
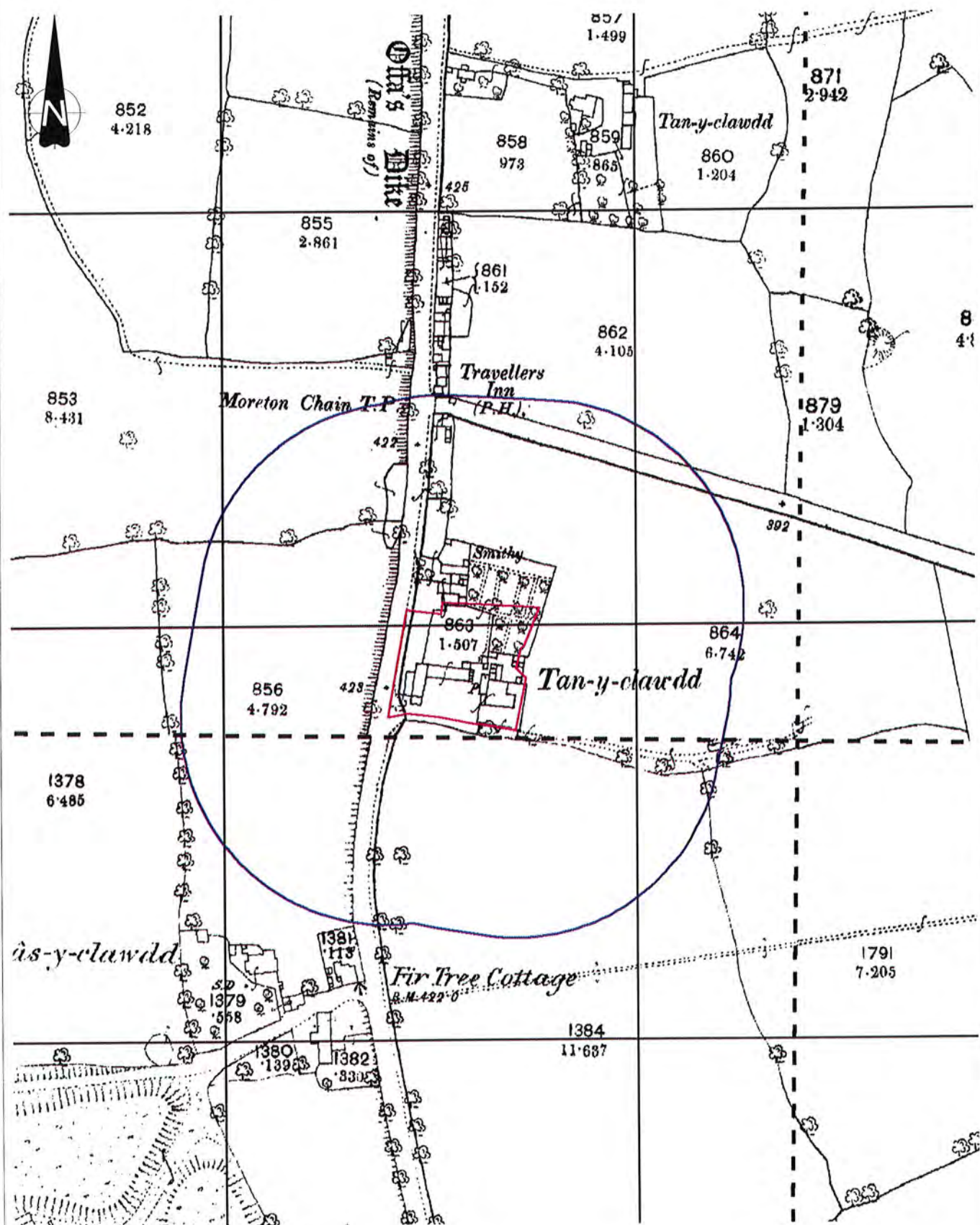


Figure Title
Additional SI
Exploratory Hole Locations

FIGURE 2a

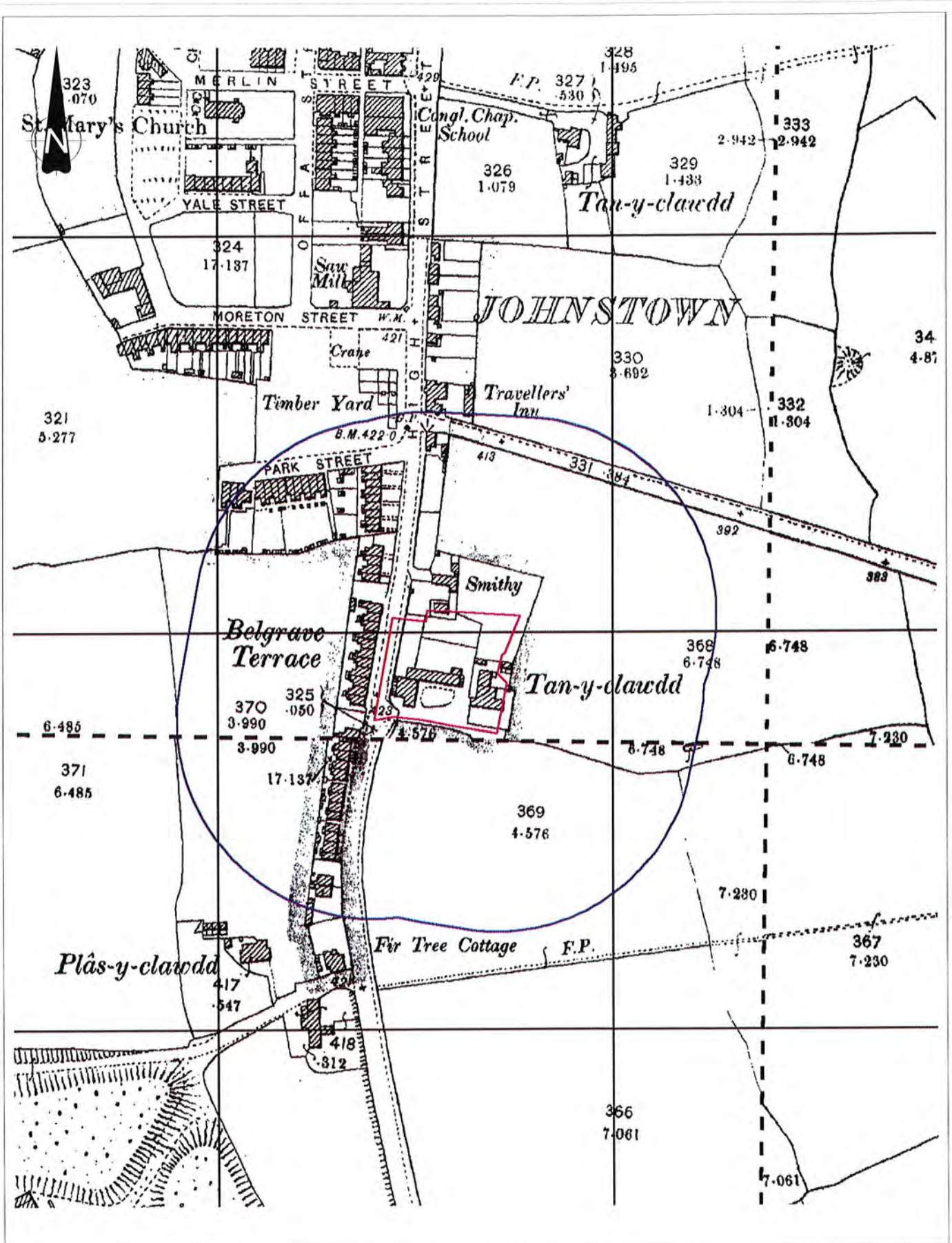


SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1874

FIGURE 3a

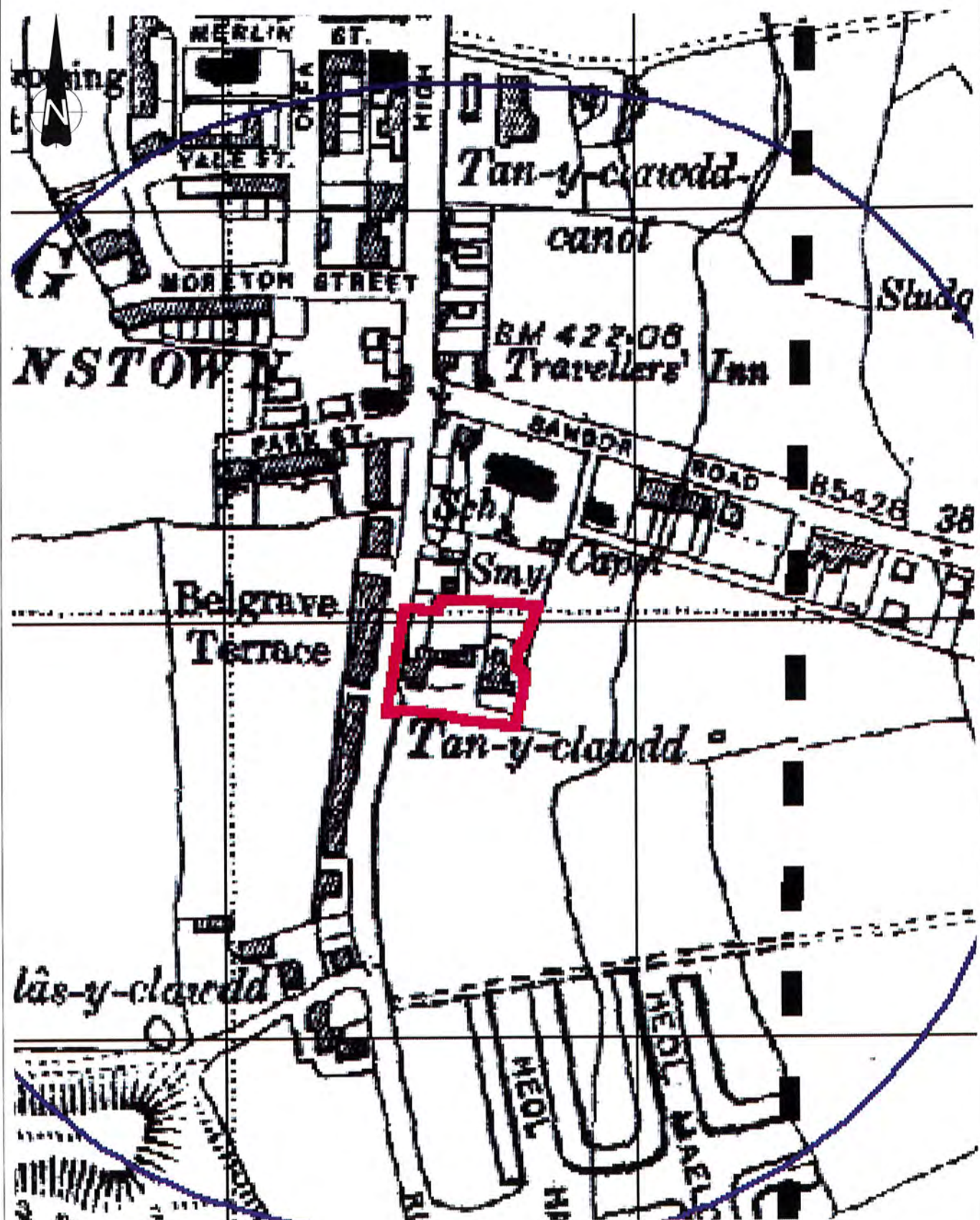


SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1900

FIGURE 3b

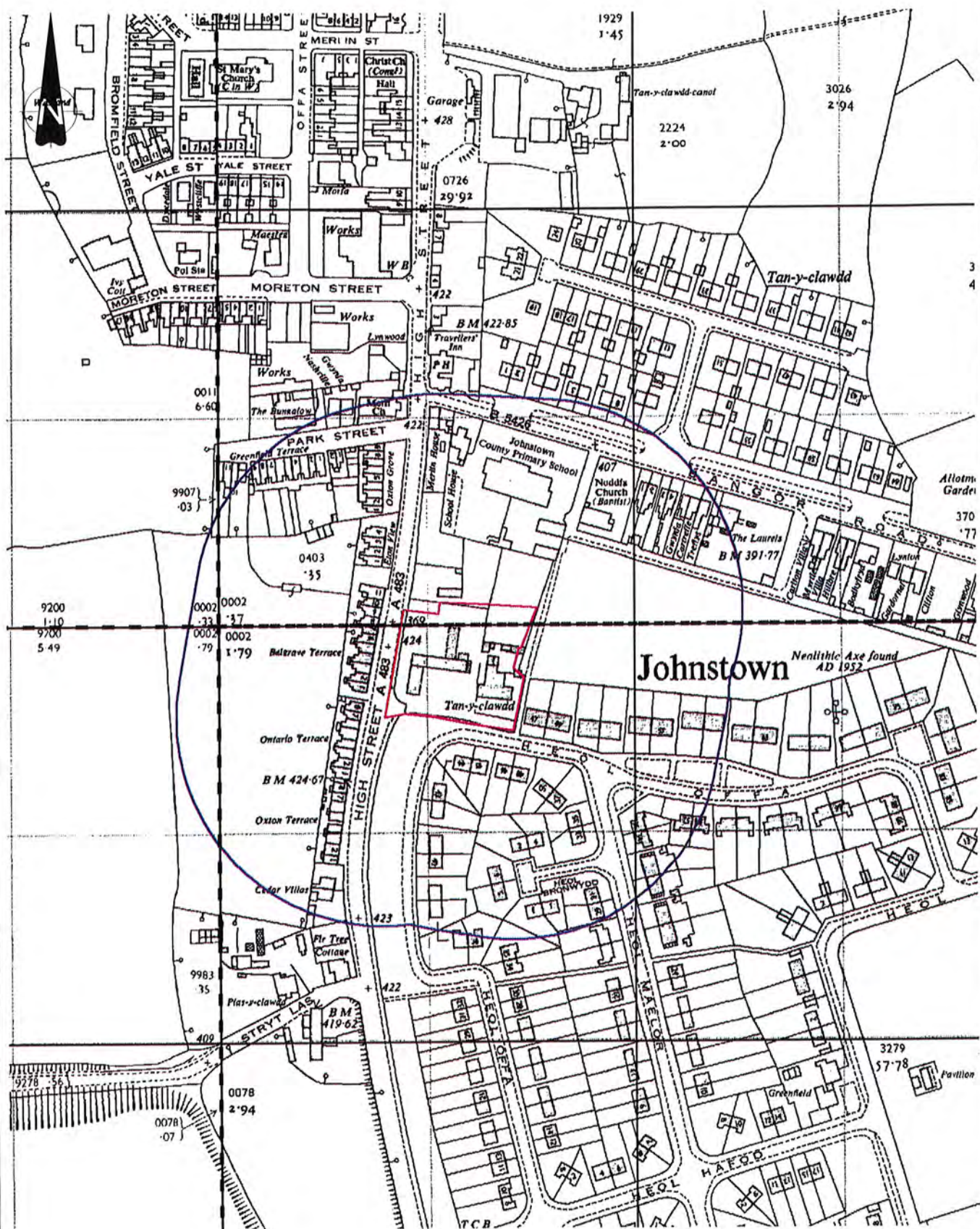


SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1938

FIGURE 3d

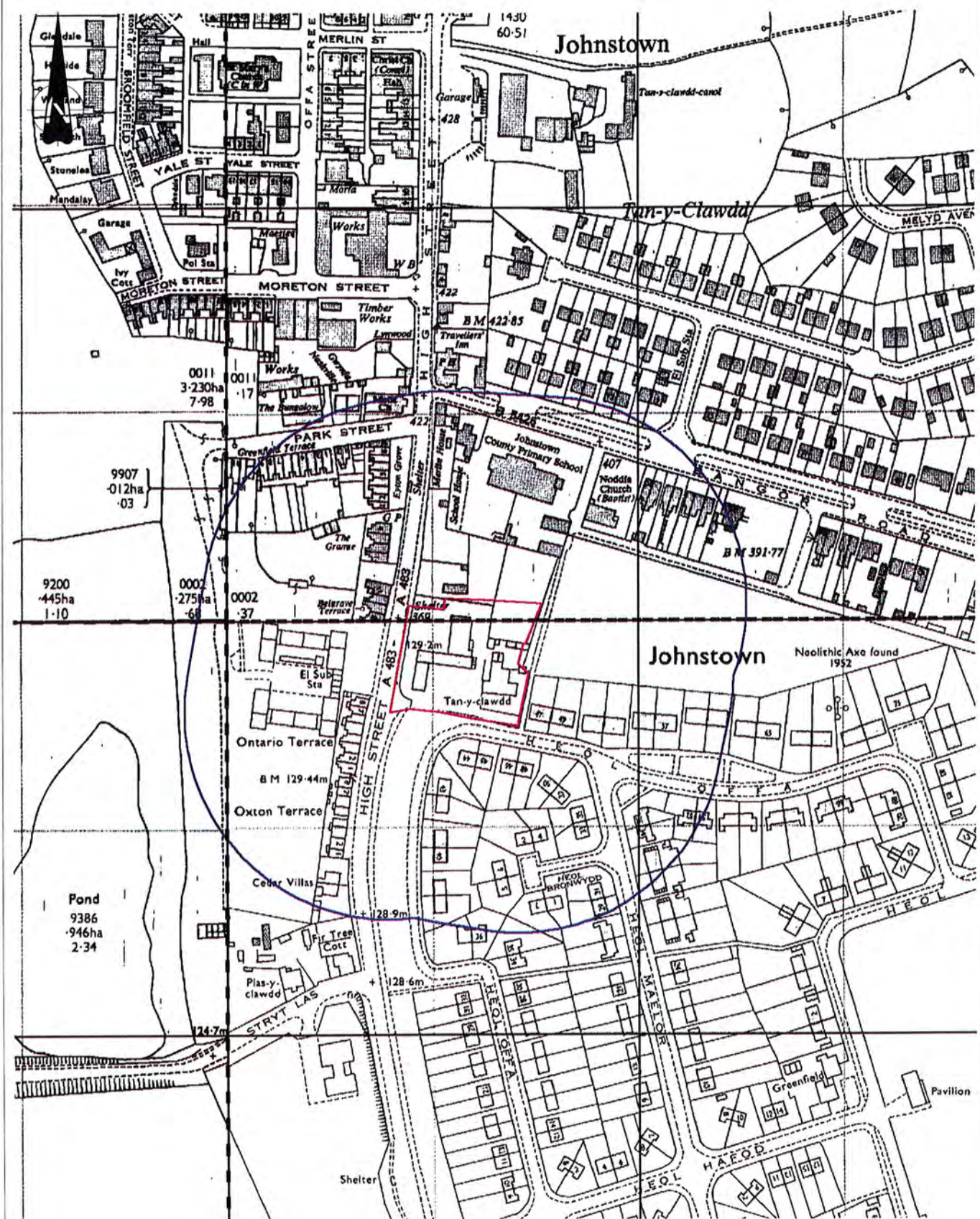


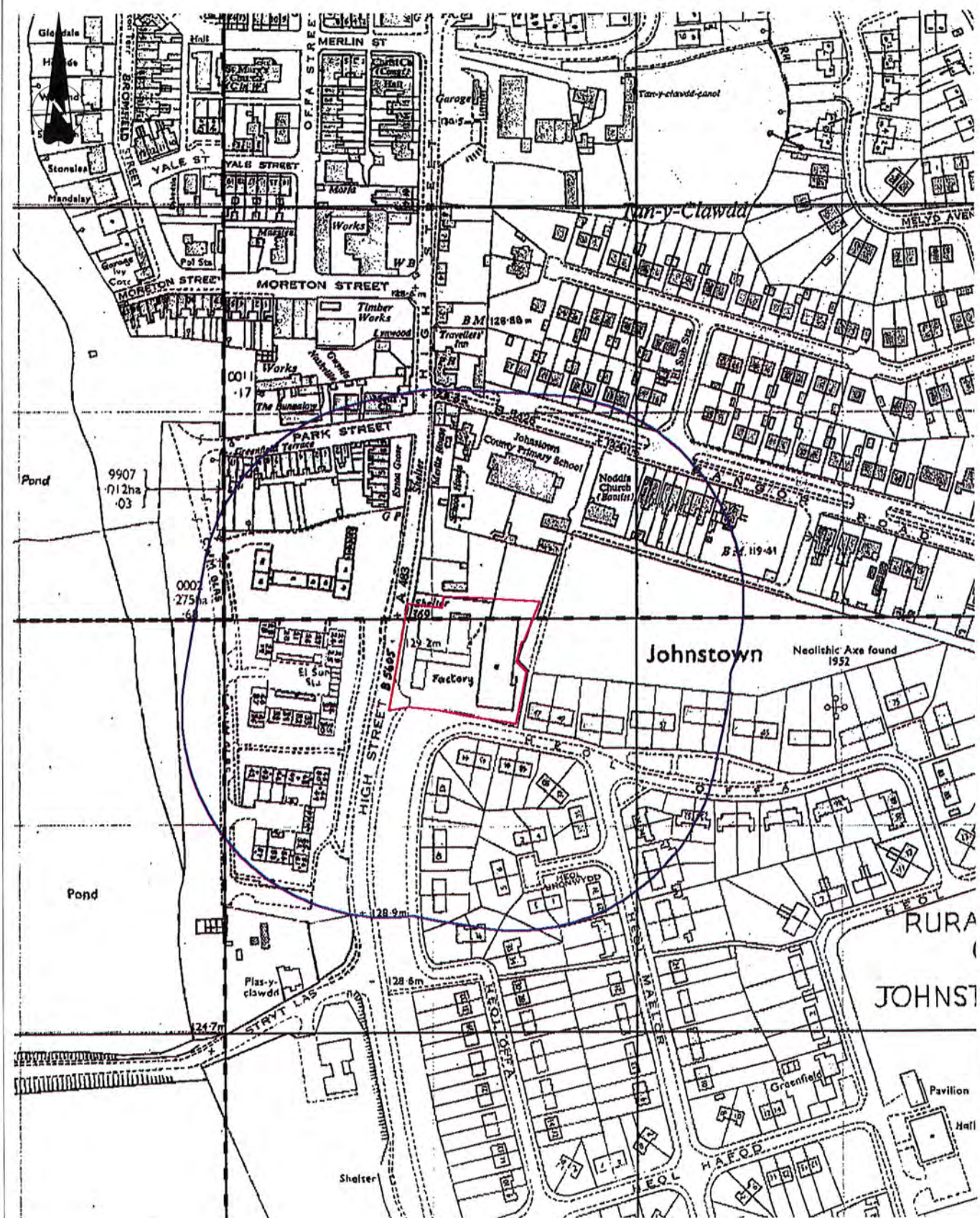
SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1964

FIGURE 3e



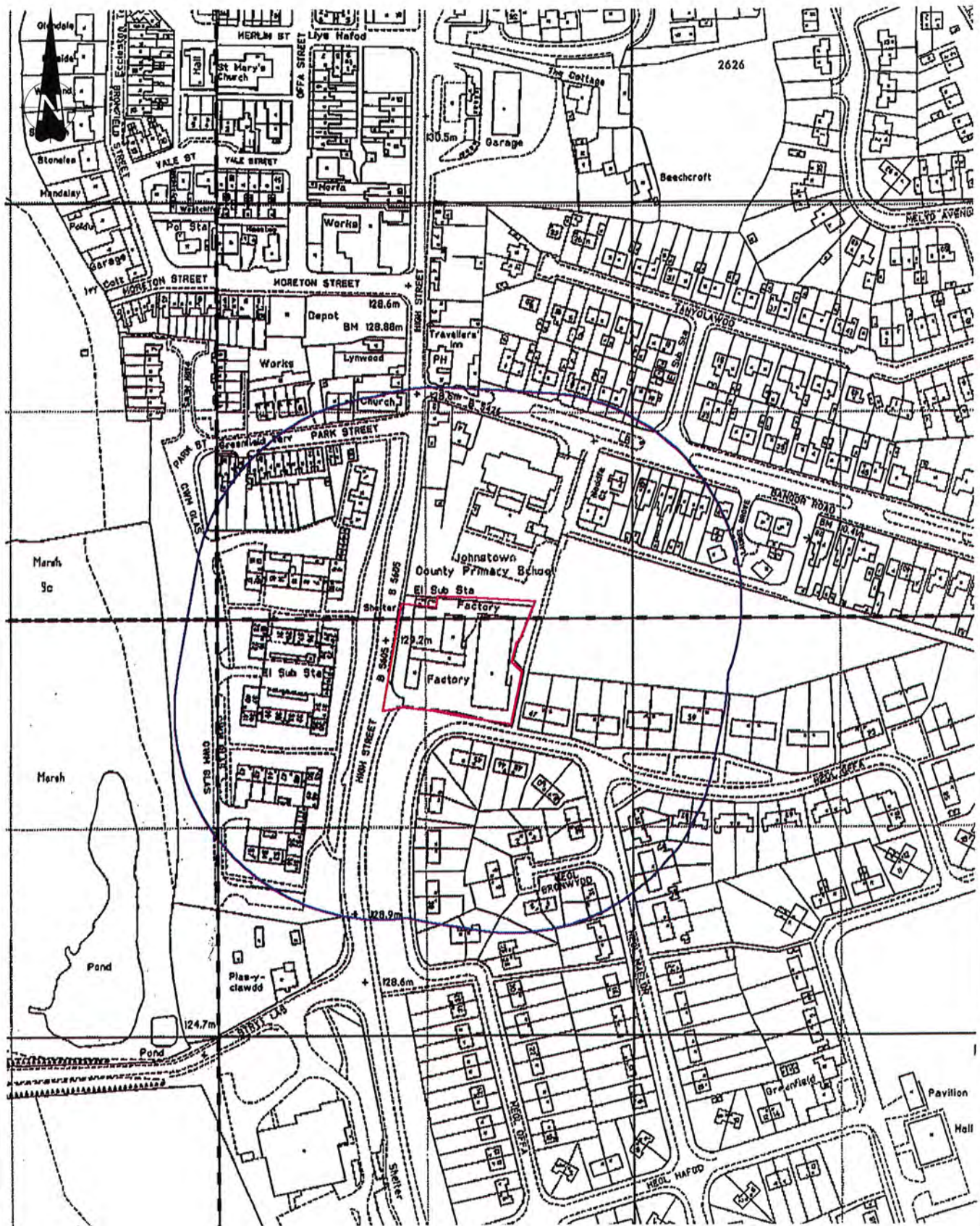


SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1989

FIGURE 3g



SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
1992

FIGURE 3h

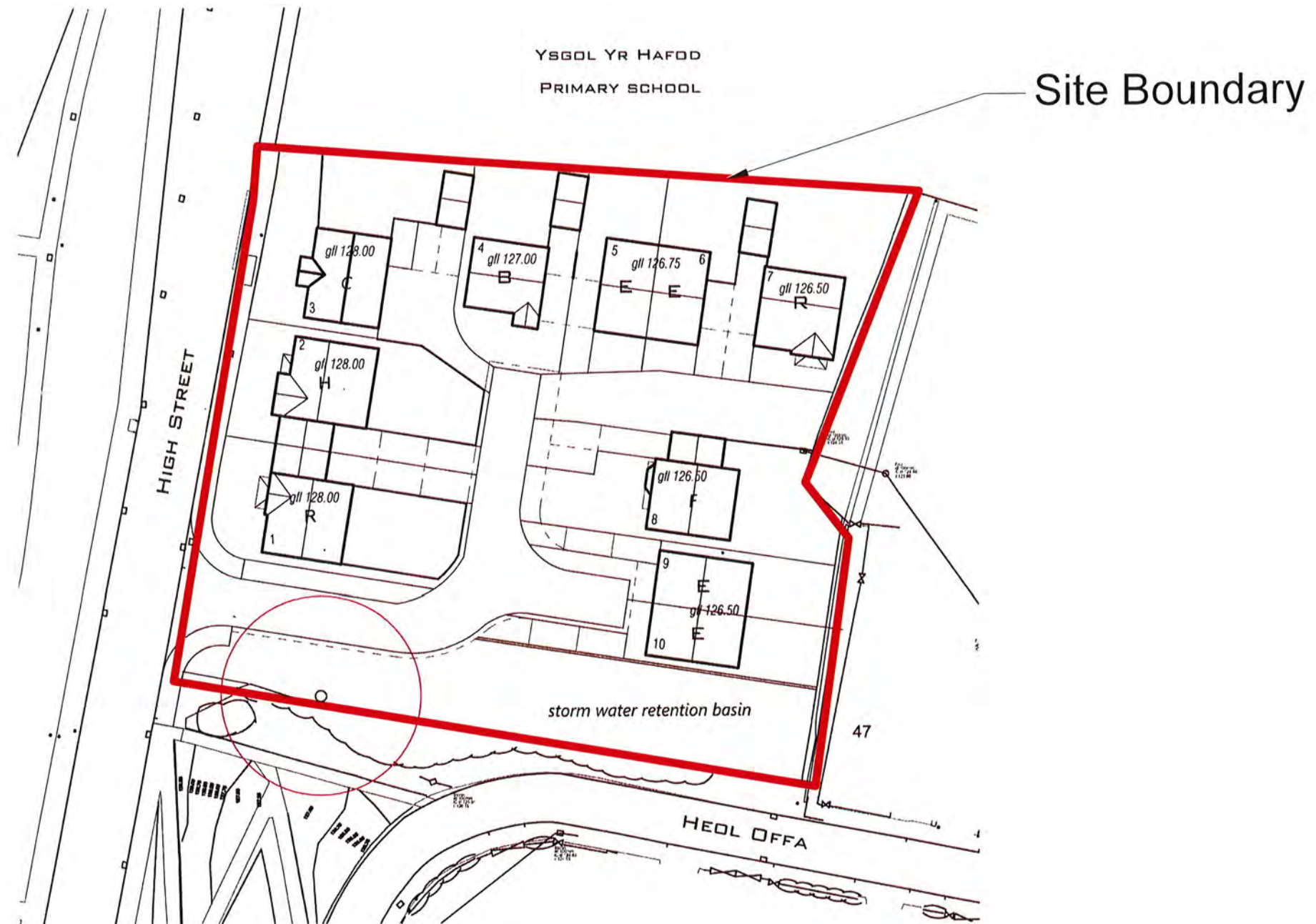


SCALE 1:2,500 @ A4

Figure Title

SITE HISTORY
2001

FIGURE 3i



SCALE 1:500 @ A3

Figure Title
PROPOSED LAYOUT

FIGURE 4



Site Boundary

Legend

- FFL Finished Floor level
- Foundations 4.5m below FFL
- Fill 2.0 - 2.50m below FFL

SCALE 1:500 @ A3

Figure Title
GEOTECHNICAL
CONSTRAINTS

FIGURE 5

APPENDIX A
Site Photographs



Photograph 1 – Site entrance from Ruabon Road, showing existing buildings



Photograph 2 – Western boundary of site showing elevation difference from Ruabon Road



Photograph 3- Facing west showing existing masonry building.



Photograph 4- Facing north showing existing masonry building and adjacent industrial unit.



Photograph 5- Facing north showing the substation.



Photograph 6- Showing the chemical storage facility.



Photograph 7- Facing North showing difference in road and site level.



Photograph 8- Showing tanks on site.



Photograph 9- Showing Retaining wall on eastern site boundary.



Photograph 10- Facing west showing partly demolished extension to the masonry building.



Photograph 11- Facing east showing boundary with school to the north and back of the industrial unit.



Photograph 12- Facing north showing the existing masonry building and the industrial unit, with the school shown to the north.

APPENDIX B

Envirocheck Report

Envirocheck[®] Report: Datasheet

Order Details:

Order Number:

242556643_1_1

Customer Reference:

2363/sdi

National Grid Reference:

330120, 345980

Slice:

A

Site Area (Ha):

0.34

Search Buffer (m):

1000

Site Details:

, Johnstown Trade Cars, Johnstown Trade Cars
High Street
Johnstown
Wrexham
LL14 6PU

Client Details:

Mr M Scott
GroundSolve Ltd
Unit 1
Well House Barns
Chester Road
Bretton
Flintshire
CH4 0DH

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	24
Hazardous Substances	-
Geological	32
Industrial Land Use	40
Sensitive Land Use	55
Data Currency	56
Data Suppliers	61
Useful Contacts	62

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			4	19
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls	pg 7			2	
Integrated Pollution Prevention And Control	pg 8			7	8
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 11				6
Local Authority Pollution Prevention and Control Enforcements	pg 12				3
Nearest Surface Water Feature	pg 12		Yes		
Pollution Incidents to Controlled Waters	pg 13		4	2	10
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 15				(*1)
Water Industry Act Referrals	pg 16			1	
Groundwater Vulnerability Map	pg 16	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 16	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 16	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 16			6	57

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 24		1		1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 24		1		3
Licensed Waste Management Facilities (Locations)	pg 25			2	10
Local Authority Landfill Coverage	pg 27	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 27		1	2	14
Potentially Infilled Land (Water)	pg 28		2	2	15
Registered Landfill Sites	pg 30		1		1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 31				2
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 32	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 32	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 32			3	25
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 37	Yes	n/a	n/a	n/a
Mining Instability	pg 37	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 37		Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 38	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 38		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 38	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 38	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 38	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 40	1	10	15	51
Fuel Station Entries	pg 46				2
Points of Interest - Commercial Services	pg 46		2	7	19
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 49	4			36
Points of Interest - Public Infrastructure	pg 52			1	17
Points of Interest - Recreational and Environmental	pg 54			4	5
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	pg 55			2	2
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
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	pg 55		1		
Special Areas of Conservation	pg 55		1		
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (N)	0	1	330116 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	64	1	330050 345900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	80	1	330000 345950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	80	1	330000 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (E)	107	1	330250 345950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (W)	130	1	329950 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	148	1	330300 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	200	1	330116 345750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	218	1	330350 346100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	230	1	329850 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	236	1	329850 345900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	237	1	329950 346200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	256	1	329850 346100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	280	1	329800 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	320	1	329800 345800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	325	1	330450 345850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	330	1	329750 345981
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	340	1	329850 346250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (NW)	370	1	329950 346350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	391	1	329900 346350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	399	1	329900 345600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	424	1	329850 345600

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	A8NW (S)	426	1	329950 345550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (SW)	432	1	329700 345750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (SW)	444	1	329900 345550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	453	1	329800 345600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	460	1	329850 346400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	474	1	329950 345500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	481	1	329900 346450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	485	1	329750 345600
1	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Fford Offa Cso, Ne 43 Ffordd Offa, Rhosllanerchrugog, Wrexham, LI14 2ey Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cg0359501 Permit Version: 2 Effective Date: 29th August 2019 Issued Date: 29th August 2019 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Watercourse Status: Effective Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	301	2	329808 346115
2	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Ffordd Offa Rhosllanerchrugog Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: CG0359501 Permit Version: 1 Effective Date: 21st July 1994 Issued Date: 21st July 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Watercourse Status: Effective Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	341	2	329770 346130
2	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Ffordd Offa Rhosllanerchrugog Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cg0359501 Permit Version: 1 Effective Date: 21st July 1994 Issued Date: 21st July 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Watercourse Status: Effective Positional Accuracy: Located by supplier to within 10m	A12NE (NW)	341	2	329770 346130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	Discharge Consents Operator: Kwik Save Group Ltd. Property Type: Undefined Or Other Location: Kwik Save Foodstore Ruabon Road Joh, Ruabon Road Johnstown Wrexham Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0177401 Permit Version: 1 Effective Date: 8th December 1988 Issued Date: 8th December 1988 Revocation Date: 22nd December 1992 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Un-Named Stream Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A8NW (S)	439	2	330030 345520
4	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Aberderfyn Cso, Rhosllanerchrugog, Nr 12 Clawdd Offa, Johnstown, Wrexham, LI14 1np Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0176101 Permit Version: 3 Effective Date: 29th August 2019 Issued Date: 29th August 2019 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Black Brook Status: Effective Positional Accuracy: Located by supplier to within 10m	A18SW (N)	554	2	329977 346550
5	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhosllanerchrugog Aberderfyn, LI14 1sn Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0176101 Permit Version: 2 Effective Date: 8th September 2010 Issued Date: 8th September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Aberderfyn Status: Effective Positional Accuracy: Located by supplier to within 100m	A18SW (N)	622	2	329900 346600
5	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhosllanerchrugog Aberderfyn, LI14 1sn Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0176101 Permit Version: 2 Effective Date: 8th September 2010 Issued Date: 8th September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Aberderfyn Status: Effective Positional Accuracy: Located by supplier to within 100m	A18SW (N)	622	2	329900 346600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Rhosllanerchgrugog Aberderfyn, LI14 1sn Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0176101 Permit Version: 1 Effective Date: 20th October 1989 Issued Date: 20th October 1989 Revocation Date: 7th September 2010 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Aberderfyn Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A18SW (N)	622	2	329900 346600
6	Discharge Consents Operator: Director And General Manager Property Type: Extraction Of Stone, Gravel Etc. Location: Hafod Quarry Bangor Road, Ruabon, Wrexham, LI14 6et Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0397901 Permit Version: 1 Effective Date: 25th March 2002 Issued Date: 25th March 2002 Revocation Date: 1st November 2004 Discharge Type: Trade Discharges - Site Drainage Discharge: Freshwater Stream/River Environment: Receiving Water: Aberderfyn Brook Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A14SW (E)	643	2	330790 345930
6	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Bangor Road - Sso Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0197501 Permit Version: 1 Effective Date: 20th October 1989 Issued Date: 20th October 1989 Revocation Date: 4th March 1994 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Aberderfyn Status: Consent expired Positional Accuracy: Located by supplier to within 100m	A14SE (E)	657	2	330800 345900
7	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Industrial Parks & Estates Location: Johnstown Vauxhall Industrial Estat, Vauxhall Industrial Estate, Ruabon, Wrexham Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0047101 Permit Version: 1 Effective Date: 17th January 1968 Issued Date: 17th January 1968 Revocation Date: 6th March 2007 Discharge Type: Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Un-Named Trib.Of Black Brook Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	668	2	330520 345400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	Discharge Consents Operator: Rees Jones Developments Ltd Property Type: Undefined Or Other Location: Johnstown Tan-Y-Clawdd Nant Park Es, Tan-Y-Clawdd Nant Park Estate Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0080902 Permit Version: 1 Effective Date: 5th February 1976 Issued Date: 5th February 1976 Revocation Date: 24th September 1992 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Aberderfyn Brook Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	697	2	330760 346350
9	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Combined Sewerage System Cso, Nr 106 Bangor Rd, Ruabon, Wrexham, LI14 6et Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0050101 Permit Version: 4 Effective Date: 21st October 2019 Issued Date: 21st October 2019 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Black Spool Status: Effective Positional Accuracy: Located by supplier to within 10m	A14NE (E)	698	2	330850 345991
10	Discharge Consents Operator: Mr Carl Scourfield Property Type: Domestic Property (Single) Location: Land To Rear Of Machine Cottage, Ruabon Road, Wrexham, Clwyd, LI14 6ra Authority: Natural Resources Wales Catchment Area: River Dee Reference: Npswqd003654 Permit Version: 1 Effective Date: 5th August 2008 Issued Date: 5th August 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Land/Soakaway Environment: 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	A8SE (S)	699	2	330123 345251
10	Discharge Consents Operator: Mr Carl Scourfield Property Type: Domestic Property (Single) Location: Land To Rear Of Machine Cottage, Ruabon, Wrexham, Clwyd, LI14 6ra Authority: Environment Agency, Midlands Region Catchment Area: Perry Catchment Reference: Npswqd003654 Permit Version: 1 Effective Date: 5th August 2008 Issued Date: 5th August 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Land/Soakaway Environment: Receiving Water: Groundwaters Via 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	A8SE (S)	699	3	330123 345251

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Ruabon Ps, LI14 1us Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0190801 Permit Version: 2 Effective Date: 8th September 2010 Issued Date: 8th September 2010 Revocation Date: 18th December 2011 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Eitha Status: Varied under EPR 2010 Positional Accuracy: Located by supplier to within 100m	A18NE (N)	735	2	330400 346700
11	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Ruabon Ps, LI14 1us Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0190801 Permit Version: 1 Effective Date: 19th October 1989 Issued Date: 19th October 1989 Revocation Date: 7th September 2010 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Eitha Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A18NE (N)	735	2	330400 346700
12	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Combined Sewerage System Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0050101 Permit Version: 3 Effective Date: 31st March 2007 Issued Date: 31st March 2007 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Black Brook Status: Effective Positional Accuracy: Located by supplier to within 100m	A14SE (E)	756	2	330900 345900
12	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Combined Sewerage System Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0050101 Permit Version: 3 Effective Date: 31st March 2007 Issued Date: 31st March 2007 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Black Brook Status: Effective Positional Accuracy: Located by supplier to within 100m	A14SE (E)	756	2	330900 345900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Combined Sewerage System Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0050101 Permit Version: 2 Effective Date: 31st March 2009 Issued Date: 8th March 2005 Revocation Date: 30th March 2007 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Black Brook Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m	A14SE (E)	756	2	330900 345900
12	Discharge Consents Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Johnstown Combined Sewerage System Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0050101 Permit Version: 1 Effective Date: 20th May 1968 Issued Date: 20th May 1968 Revocation Date: 30th March 2009 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Black Brook Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A14SE (E)	756	2	330900 345900
13	Discharge Consents Operator: Alexander Russell Plc Property Type: Undefined Or Other Location: Ruabon Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0147601 Permit Version: 1 Effective Date: 4th April 1986 Issued Date: 4th April 1986 Revocation Date: 7th August 1986 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Aberderfyn Brook Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	793	2	330810 346450
14	Discharge Consents Operator: Rees Jones Developments Ltd Property Type: Undefined Or Other Location: Johnstown Tan-Y-Clawdd Nant Park Es, Tan-Y-Clawdd Nant Park Estate Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0080901 Permit Version: 1 Effective Date: 5th February 1976 Issued Date: 5th February 1976 Revocation Date: 24th September 1992 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Aberderfyn Brook Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	806	2	330730 346570
15	Integrated Pollution Controls Name: Morgan Advanced Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HY Authority: Environment Agency, Welsh Region Permit Reference: BC9305 Dated: 24th November 1998 Process Type: IPC minor (non-substantial) variation to previous variation Description: 4.5 A (F) Inorganic Chemical processes within the Chemical Industry Status: Revoked - Now IPPC Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	494	3	330487 345597

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	Integrated Pollution Controls Name: Morgan Advanced Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HY Authority: Environment Agency, Welsh Region Permit Reference: AO0164 Dated: 28th November 1994 Process Type: IPC application for process that was regulated by HMIP for air releases under previous legislation Description: 4.5 A (F) Inorganic Chemical processes within the Chemical Industry Status: Authorisation superseded by a substantial or non substantial variation Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	494	3	330487 345597
16	Integrated Pollution Prevention And Control Name: Ruabon Electro Ceramics Location: Ruabon Electro Ceramics, Vauxhall Industrial Estate, Ruabon., WREXHAM, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: PP3834CB Original Permit Ref: Zp3831cu Effective Date: 13th April 2018 Status: Effective Application Type: Bespoke App. Sub Type: Not Supplied Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 PART A (1) D) Activity Description: Not Supplied Primary Activity: Y Activity Code: 5.3 A(1) a) (ii) Activity Description: Not Supplied Primary Activity: N	A9NW (SE)	485	2	330470 345594
16	Integrated Pollution Prevention And Control Name: Morgan Technical Ceramics Limited Location: Ruabon Electro Ceramics, Vauxhall Industrial Estate, Ruabon., WREXHAM, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: ZP3831CU Original Permit Ref: Pp3834cb Effective Date: 26th September 2012 Status: Effective Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594
16	Integrated Pollution Prevention And Control Name: Morgan Electro Ceramics Ltd Location: Ruabon Electro Ceramics, Vauxhall Industrial Estate, Ruabon., WREXHAM, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: UP3938HY Original Permit Ref: By0364ib Effective Date: 25th January 2011 Status: Superseded By Variation Application Type: Variation App. Sub Type: Simple Standard Variation Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594
16	Integrated Pollution Prevention And Control Name: Morgan Electro Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: QP3232UM Original Permit Ref: By0364ib Effective Date: 23rd August 2007 Status: Superseded By Variation Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	Integrated Pollution Prevention And Control Name: Morgan Electro Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: FP3838MT Original Permit Ref: By0364ib Effective Date: 26th February 2007 Status: Superseded By Variation Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594
16	Integrated Pollution Prevention And Control Name: Morgan Electro Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: NP3338LX Original Permit Ref: By0364ib Effective Date: 18th July 2006 Status: Superseded By Variation Application Type: Variation App. Sub Type: Standard Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594
16	Integrated Pollution Prevention And Control Name: Morgan Electro Ceramics Ltd Location: Ruabon Electro Ceramics, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HY Authority: Natural Resources Wales Permit Reference: By0364ib Original Permit Ref: By0364ib Effective Date: 31st August 2005 Status: Superseded By Variation Application Type: Application App. Sub Type: New Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (D) Activity Description: Inorganic Chemicals; Using Etc Of Antimony Etc (Unless Otherwise Prescribed) (Unless Glazing Etc) Primary Activity: Y	A9NW (SE)	485	2	330470 345594
17	Integrated Pollution Prevention And Control Name: Hafod Quarry Landfill Location: Hafod Landfill Ea/Epr/Pp3139gb/T001, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: PP3139GB Original Permit Ref: Dp3636zc Effective Date: 26th January 2016 Status: Effective Application Type: Bespoke App. Sub Type: Not Supplied Positional Accuracy: Located by supplier to within 10m Activity Code: 1.1 PART A (1) B (I) Activity Description: Not Supplied Primary Activity: N	A9NE (SE)	828	2	330860 345540

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	Integrated Pollution Prevention And Control Name: Cory Environmental (Central) Ltd Location: Hafod Landfill - Ea/Epr/Pp3139gb/V005, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: DP3839FS Original Permit Ref: Pp3139gb Effective Date: 7th February 2012 Status: Superseded By Variation Application Type: Variation App. Sub Type: Standard Positional Accuracy: Located by supplier to within 10m Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y Activity Code: 1.1 A(1) (B) (III) Activity Description: Combustion; Waste Derived Fuel Greater Or Equal To 3Mw But Less Than 50Mw Primary Activity: N	A9NE (SE)	828	2	330860 345540
17	Integrated Pollution Prevention And Control Name: Cory Environmental (Central) Ltd Location: Hafod Landfill - Ea/Epr/Pp3139gb/V005, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: PP3934TD Original Permit Ref: Pp3139gb Effective Date: 8th June 2010 Status: Superseded By Variation Application Type: Variation App. Sub Type: Minor Positional Accuracy: Located by supplier to within 10m Activity Code: 1.1 A(1) (B) (III) Activity Description: Combustion; Waste Derived Fuel Greater Or Equal To 3Mw But Less Than 50Mw Primary Activity: N Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A9NE (SE)	828	2	330860 345540
17	Integrated Pollution Prevention And Control Name: Cory Environmental (Central) Ltd Location: Hafod Landfill - Ea/Epr/Pp3139gb/V004, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council. LL14 6ET Authority: Natural Resources Wales Permit Reference: KP3933KM Original Permit Ref: Pp3139gb Effective Date: 25th September 2009 Status: Superseded By Variation Application Type: Variation App. Sub Type: Substantial Positional Accuracy: Located by supplier to within 10m Activity Code: 1.1 A(1) (B) (III) Activity Description: Combustion; Waste Derived Fuel Greater Or Equal To 3Mw But Less Than 50Mw Primary Activity: N Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A9NE (SE)	828	2	330860 345540
17	Integrated Pollution Prevention And Control Name: Cory Environmental Ltd Location: Hafod Landfill - Ea/Epr/Pp3139gb/V003, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: GP3034GM Original Permit Ref: Pp3139gb Effective Date: 27th March 2009 Status: Superseded By Variation Application Type: Variation App. Sub Type: Simple Standard Variation Positional Accuracy: Located by supplier to within 10m Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A9NE (SE)	828	2	330860 345540

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	Integrated Pollution Prevention And Control Name: Mersey Waste Holdings Associate Ltd Location: Hafod Landfill Ea/Epr/Bs8621iw/T003, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: Bs8621iw Original Permit Ref: Bs8621iw Effective Date: 8th October 2004 Status: Superseded By Variation Application Type: Application App. Sub Type: New Positional Accuracy: Located by supplier to within 10m Activity Code: 5.3 A(1) (C) (I) Activity Description: Other Waste Disposal; Non-Hazardous Waste >50T/D By Biological Treatment Primary Activity: N Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A9NE (SE)	828	2	330860 345540
18	Integrated Pollution Prevention And Control Name: Mersey Waste Holdings Associate Ltd Location: Hafod Landfill, Hafod Quarry And Landfill Site, Bangor Road,,, Johnstown, Wrexham Borough Council, LL14 6ET Authority: Natural Resources Wales Permit Reference: TP3032LA Original Permit Ref: Bs8621iw Effective Date: 28th February 2007 Status: Superseded By Variation Application Type: Variation App. Sub Type: Minor Positional Accuracy: Manually positioned to the road within the address or location Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A14SE (E)	883	2	331014 345813
19	Integrated Pollution Prevention And Control Name: Cory Environmental (Central) Ltd Location: Hafod Quarry Landfill, Hafod Quarry Landfill, Bangor Road,Johnstown,, Wrexham, LL14 6ET Authority: Natural Resources Wales Permit Reference: DP3636ZC Original Permit Ref: Pp3139gb Effective Date: 26th June 2013 Status: Effective Application Type: Variation App. Sub Type: Minor Positional Accuracy: Manually positioned within the geographical locality Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N	A14NE (E)	929	2	331081 346002
20	Local Authority Pollution Prevention and Controls Name: Morgan Electro Ceramics Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6ha Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: 41 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/45 Surface cleaning Status: Authorisation certificate surrendered by operator Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	510	4	330474 345564
21	Local Authority Pollution Prevention and Controls Name: Snax 24 Location: Wrexham Road, Johnstown, WREXHAM, Clwyd, LL14 1PA Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: WCBC/PG1/14(13)V3 Dated: 23rd December 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	4	330122 346609

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	Local Authority Pollution Prevention and Controls Name: G H A Coaches Location: Unit 11 Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6ha Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: WCBC-PG1-1-1-GHA Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG1/Waste oil burners, less than 0.4MW net rated thermal input Status: Permitted Positional Accuracy: Manually positioned to the address or location	A8SE (SE)	722	4	330419 345284
23	Local Authority Pollution Prevention and Controls Name: Flint Ink (Uk) Ltd Location: Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HU Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: WCBC/PG6/44/F1 Dated: 9th February 1994 Process Type: Local Authority Air Pollution Control Description: PG6/44 Manufacture of coating materials Status: Authorised Positional Accuracy: Manually positioned to the address or location	A8SE (S)	758	4	330344 345220
24	Local Authority Pollution Prevention and Controls Name: Steni Uk Ltd Location: Units 1-4 Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HA Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: WCBC/PG4/2/SF/V1 Dated: 26th September 2001 Process Type: Local Authority Air Pollution Control Description: PG4/2 Processes for the manufacture of fibre reinforced plastics Status: Site Closed Positional Accuracy: Manually positioned to the address or location	A8SE (S)	820	4	330284 345142
24	Local Authority Pollution Prevention and Controls Name: Rockrite Ltd Location: Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HA Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: Wcbs/Pg3/1(5)V1 Dated: 14th July 2002 Process Type: Local Authority Air Pollution Control Description: Part B - General Mineral Process (No Specific Reference) Status: Authorised Positional Accuracy: Manually positioned to the address or location	A8SE (S)	828	4	330261 345131
25	Local Authority Pollution Prevention and Control Enforcements Location: Unit 11 Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Type: Air Pollution Control Enforcement Notice Reference: WCBC-PG1-1-1-GHA Date Issued: Not Supplied Enforcement Date: 1st March 2011 Details: Not Supplied Positional Accuracy: Manually positioned to the address or location	A8SE (SE)	722	4	330419 345284
26	Local Authority Pollution Prevention and Control Enforcements Location: Units 1-4 Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6ha Type: Air Pollution Control Enforcement Notice Reference: NOT GIVEN Date Issued: 1st February 2002 Enforcement Date: Not Supplied Details: Section 13 Notice Served Positional Accuracy: Manually positioned to the address or location	A8SE (S)	820	4	330284 345142
26	Local Authority Pollution Prevention and Control Enforcements Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6ha Type: Air Pollution Control Enforcement Notice Reference: NOT GIVEN Date Issued: 1st April 2002 Enforcement Date: Not Supplied Details: Section 80 Notice Served Positional Accuracy: Manually positioned to the address or location	A8SE (S)	828	4	330261 345131
	Nearest Surface Water Feature	A13SW (W)	122	-	329954 345959

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	Pollution Incidents to Controlled Waters Property Type: Road (Lost Load) Location: Offa Street Authority: Environment Agency, Welsh Region Pollutant: Natural Foam Note: Accidental Spillage/Leakage Incident Date: 23rd April 1995 Incident Reference: 23923 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SE (SE)	78	3	330200 345900
28	Pollution Incidents to Controlled Waters Property Type: Not Given Location: High Street, JOHNSTOWN Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Fire water / Foam Note: River Dee Incident Date: 7th September 1997 Incident Reference: 33513 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	84	3	330001 345996
28	Pollution Incidents to Controlled Waters Property Type: Miscellaneous Premises: Surface Runoff Location: Ashtons Furnace Bank, WREXHAM Authority: Environment Agency, Welsh Region Pollutant: Cement/Mortar Note: Vandalism Incident Date: 13th October 1994 Incident Reference: 21391 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	85	3	330001 346001
29	Pollution Incidents to Controlled Waters Property Type: Warehouses Location: Petrol Station, JOHNSTOWN Authority: Environment Agency, Welsh Region Pollutant: Oils - Diesel (Including Agricultural) Note: Accidental Spillage/Leakage Incident Date: 21st October 1995 Incident Reference: 26445 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (N)	90	3	330100 346100
30	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Next To, 39 Brandy Lane Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Afon Goch; Overflow Incident Date: 12th January 1998 Incident Reference: 34925 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Weather Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	452	3	330100 345500
31	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Snack 24 Garage, Johnstow N, WREXHAM Authority: Environment Agency, Welsh Region Pollutant: Oils - Petrol Note: Accident Incident Date: 20th February 1997 Incident Reference: 31356 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SW (N)	489	3	330100 346500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	Pollution Incidents to Controlled Waters Property Type: Water Company Sewage: Surface Water Outfall Location: Road By House, Near Old Coal Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Natural Causes Incident Date: 30th December 1994 Incident Reference: 22074 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	578	3	329730 346460
33	Pollution Incidents to Controlled Waters Property Type: Water Company Sewage: Surface Water Outfall Location: Aberderfyn Authority: Environment Agency, Welsh Region Pollutant: Mining Water Note: Vandalism Incident Date: 13th May 1995 Incident Reference: 23992 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	669	3	330300 345300
34	Pollution Incidents to Controlled Waters Property Type: Road (Lost Load) Location: Hill Street, Rhosllan, Erchrugog, WREXHAM Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Accidental Spillage/Leakage Incident Date: 5th August 1995 Incident Reference: 25324 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	708	3	329500 346400
35	Pollution Incidents to Controlled Waters Property Type: Not Given Location: 20 Heol Ddyfrdwy, JOHNSTOWN Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Fire water / Foam Note: Afon Clywedog; Run-Off Incident Date: 24th November 1997 Incident Reference: 34181 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	768	3	329500 346500
36	Pollution Incidents to Controlled Waters Property Type: Road (Lost Load) Location: Factory, Vauxhall Industrial Estate Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Accidental Spillage/Leakage Incident Date: 2nd September 1995 Incident Reference: 25598 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Leakage Incident Severity: Category 1 - Major Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	790	3	330390 345200
37	Pollution Incidents to Controlled Waters Property Type: Not Given Location: The Firs, Brundy Road, JOHNSTOWN Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Fire water / Foam Note: Mechanical/Electrical Failure Incident Date: 1st May 1997 Incident Reference: 32133 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (E)	848	3	331000 346000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Aberderlyn Road, JOHNSTOWN Authority: Environment Agency, Welsh Region Pollutant: Sewage - Septic Tank Effluent Note: Accidental Spillage/Leakage Incident Date: 12th April 1991 Incident Reference: 2596 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	893	3	330200 346900
39	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Oils - Diesel (Including Agricultural) Note: Deliberate Act Incident Date: 25th October 1996 Incident Reference: 30285 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	904	3	330350 345070
40	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Outfall Of Sewgae, Below White Cottage And Bridge Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Poor Management Incident Date: 24th January 1997 Incident Reference: 30980 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Bypass Of Treatment Facilities Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A11SE (W)	992	3	329100 345800
41	Pollution Incidents to Controlled Waters Property Type: Industrial Premises Location: Culvert Under, New Bypass Near, Hafod House Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Weather Incident Date: 12th February 1992 Incident Reference: 3376 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A15SW (E)	1000	3	331150 345950
	Water Abstractions Operator: Wrexham County Borough Licence Number: 24/67/7/0181 Permit Version: 100 Location: Afon Goch Authority: Environment Agency, Welsh Region Abstraction: Water Supply Related: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: River Gwenfro Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th February 1974 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4NW (SE)	1193	3	330760 344930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	Water Industry Act Referrals Name: Morgan Advanced Ceramics Ltd Location: VAUXHALL INDUSTRIAL ESTATE, RUABON, WREXHAM, CLWYD, LL14 6HY Authority: Natural Resources Wales Permit Reference: AU5971 Dated: 18th January 1996 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations Status: Application received by the EA but is not yet authorised Positional Accuracy: Automatically positioned to the address	A9NW (SE)	489	2	330470 345589
	Groundwater Vulnerability Map Combined: Secondary Superficial Aquifer - High Vulnerability Classification: High Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial: >90% Patchiness: 3-10m Superficial Thickness: Medium Superficial Recharge:	A13NE (N)	0	2	330116 346000
	Groundwater Vulnerability Map Combined: Secondary Superficial Aquifer - High Vulnerability Classification: High Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial: >90% Patchiness: 3-10m Superficial Thickness: Medium Superficial Recharge:	A13NE (N)	0	2	330116 345981
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (N)	0	2	330116 345981
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (N)	0	2	330116 345981
	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				
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13SW (SW)	363	5	329884 345650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 323.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8NW (SW)	394	5	329948 345585
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 452.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18SW (NW)	423	5	329902 346387
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 94.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8NW (SW)	445	5	329830 345588
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 907.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A7NE (SW)	494	5	329725 345611
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 20.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A7NE (SW)	495	5	329726 345610
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8NW (S)	508	5	330088 345445
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 26.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	508	5	330088 345445
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 842.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14SW (E)	516	5	330657 345897
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 51.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8NE (S)	533	5	330164 345417

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 100.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (SW)	568	5	329820 345451
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 201.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8NE (S)	583	5	330176 345368
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (SW)	653	5	329832 345352
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 201.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (SW)	657	5	329833 345347
57	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 263.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A14NE (E)	663	5	330808 346101
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14NE (E)	673	5	330824 346040
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 351.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A14NE (E)	678	5	330829 346042
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14NW (NE)	700	5	330788 346300
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 168.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A14NW (NE)	700	5	330788 346300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A9NW (SE)	716	5	330565 345373
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	734	5	330713 346481
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.0 Watercourse Level: Underground Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A19SW (NE)	738	5	330720 346480
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 108.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A19SW (NE)	738	5	330720 346480
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 174.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A18NE (N)	749	5	330228 346753
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	750	5	330752 346458
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A19SW (NE)	750	5	330752 346458
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	757	5	330757 346464
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 133.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	757	5	330757 346464

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 95.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NE (N)	763	5	330203 346769
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 487.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A19SW (NE)	766	5	330661 346580
73	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NW (N)	773	5	330109 346784
74	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 29.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	776	5	330779 346466
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 43.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NW (N)	781	5	330093 346791
76	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 11.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	781	5	330862 346333
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 56.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8SE (S)	781	5	330168 345169
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 61.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NW (N)	786	5	329993 346788
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 94.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	790	5	330868 346343

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	801	5	330808 346469
81	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 9.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	810	5	330815 346473
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 83.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	819	5	330822 346478
83	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 182.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	824	5	330739 346587
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 144.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8SE (S)	835	5	330162 345115
85	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 7.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	849	5	330905 346400
86	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 17.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	856	5	330774 346595
87	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	865	5	330770 346614
88	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 5.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	876	5	330772 346627

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 124.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SW (NE)	879	5	330771 346632
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	895	5	330896 346505
91	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 191.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	901	5	330902 346507
92	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 305.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A9SW (SE)	931	5	330672 345186
93	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 18.8 Watercourse Level: Underground Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A14SE (E)	965	5	331101 345835
94	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 21.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	968	5	331026 346426
95	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 145.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A9SW (SE)	972	5	330747 345190
96	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	976	5	330766 346767
97	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.5 Watercourse Level: Underground Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8SE (S)	976	5	330152 344974

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 40.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	981	5	330767 346772
99	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 158.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	981	5	330789 346755
100	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 227.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	981	5	330789 346755
101	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 142.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Goch Catchment Name: Dee Primacy: 1	A8SE (S)	981	5	330142 344969
102	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 106.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Aberderfyn Catchment Name: Dee Primacy: 1	A14SE (E)	984	5	331119 345830
103	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 9.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	986	5	331047 346422
104	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	995	5	331056 346422
105	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19SE (NE)	998	5	331058 346426

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
106	Historical Landfill Sites Licence Holder: Watkin Jones and Son Limited Location: Stryd Las, Johnstown, Wrexham Name: Stryd Las Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14774 First Input Date: 31st December 1993 Last Input Date: 31st December 1995 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 37077 Regis Ref: WW1/L/WAT001 WRC Ref: 6955/0052 BGS Ref: Not Supplied Other Ref: NOW-513-L, WMBC L75	A13NW (NW)	128	2	329967 346047
107	Historical Landfill Sites Licence Holder: Sita Uk Location: Bangor Road, Johnstown, Wrexham Name: Hafod Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD34211 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Not Supplied Type: EA Waste Ref: 37201 Regis Ref: WW1/L/SWM001 WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: Not Supplied	A14SW (E)	514	2	330653 345891
108	Licensed Waste Management Facilities (Landfill Boundaries) Name: Stryd Las Licence Number: 37077 Location: Stryd Las, Johnstown, Wrexham, LL14 2AN Licence Holder: Watkin Jones & Sons Authority: Natural Resources Wales Site Category: Landfills Taking Non-biodegradable Wastes (Not Construction) Max Input Rate: Large (Equal to or greater than 75,000 tonnes per year) Licence Status: Inactive Issued: 22nd July 1993 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NW (NW)	201	2	329925 346124
109	Licensed Waste Management Facilities (Landfill Boundaries) Name: Hafod Quarry Licence Number: 37201 Location: Bangor Road, Johnstown, Wrexham, LL14 6ET Licence Holder: Sita Uk Authority: Natural Resources Wales Site Category: Co-disposal Landfill Sites Max Input Rate: Large (Equal to or greater than 75,000 tonnes per year) Licence Status: Inactive Issued: 30th April 1999 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14SW (E)	514	2	330653 345891
110	Licensed Waste Management Facilities (Landfill Boundaries) Name: Not Supplied Licence Number: 37201 Location: Not Supplied Licence Holder: Not Supplied Authority: Natural Resources Wales Site Category: Not Supplied Max Input Rate: Not Supplied Licence Status: Inactive Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14SW (E)	514	2	330653 345891

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	Licensed Waste Management Facilities (Landfill Boundaries) Name: Hafod Quarry Landfill Licence Number: 37286 Location: Bangor Road, Johnstown, Wrexham, Clwyd, LL14 6ET Licence Holder: Cory Environmental (Central) Ltd Authority: Natural Resources Wales Site Category: Household, Commercial And Industrial Waste Landfills Max Input Rate: Not Supplied Licence Status: PPC Issued: 8th March 2005 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14SW (E)	517	2	330658 345900
112	Licensed Waste Management Facilities (Locations) Licence Number: 37077 Location: Stryd Las, Johnstown, Wrexham, Clwyd, LL14 2AN Operator Name: Watkin Jones & Son Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Licence Status: Surrendered Issued: 22nd July 1993 Last Modified: 31st March 2003 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 17th August 2005 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	381	2	329878 346325
113	Licensed Waste Management Facilities (Locations) Licence Number: FB3234AY Location: Brother Industries (U.K.) Ltd., Brother Industries (U.K.) Ltd., Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, Wrexham, LL14 6HA Operator Name: Brother Industries (U.K.) Ltd. Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Material Recycling Treatment Facilities Licence Status: Effective Issued: 10th September 2018 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	498	2	330333 345490
114	Licensed Waste Management Facilities (Locations) Licence Number: 103896 Location: Brother Industries (U K) Ltd, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Operator Name: Brother Industries (U K) Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Material Recycling Treatment Facilities Licence Status: Issued Issued: 6th August 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A8NW (S)	551	2	330100 345400
115	Licensed Waste Management Facilities (Locations) Licence Number: AP3194FU Location: H K Motors, Ruabon, Ruabon, Wrexham, Clwyd, Wrexham, LL14 6RG Operator Name: Williams H K; K; D H; A K; C A; I J And N G Williams Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Metal Recycling Sites (Vehicle Dismantlers) Licence Status: Effective Issued: 28th March 2003 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	882	2	330096 345069

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
115	Licensed Waste Management Facilities (Locations) Licence Number: 37231 Location: H K Motors, Gardden Industrial Estate, Ruabon, Wrexham, LL14 6RG Operator Name: Williams H K; K; D H; A K; C A; I J And N G Williams Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Metal Recycling Sites (Vehicle Dismantlers) Licence Status: Modified Issued: 28th March 2003 Last Modified: 10th December 2003 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	882	2	330096 345069
116	Licensed Waste Management Facilities (Locations) Licence Number: EP3794FY Location: I Hayward Ltd, I Hayward Ltd, Gardden Ind Est, Ruabon, Wrexham, Clwyd, Wrexham, LL14 6RG Operator Name: I Hayward Limited Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Metal Recycling Sites (Mixed) Licence Status: Effective Issued: 30th April 1999 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	962	2	330082 344990
116	Licensed Waste Management Facilities (Locations) Licence Number: 37162 Location: I Hayward Ltd, Gardden Ind Est, Ruabon, Wrexham, LL14 6RG Operator Name: I Hayward Limited Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Metal Recycling Sites (Mixed) Licence Status: Modified Issued: 31st March 1999 Last Modified: 31st January 2013 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	962	2	330082 344990
116	Licensed Waste Management Facilities (Locations) Licence Number: NP3290VM Location: Clwyd Breakers Ltd, Ruabon, Wrexham, Clwyd, Wrexham, LL14 6RG Operator Name: Clwyd Breakers Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Vehicle depollution facility Licence Status: Revoked Issued: 7th October 2010 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: 2nd January 2019 Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NW (S)	997	2	330053 344957

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
116	Licensed Waste Management Facilities (Locations) Licence Number: 102006 Location: Gardden Industrial Estate, Ruabon, Wrexham, LL14 6RG Operator Name: Clwyd Breakers Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Vehicle depollution facility Licence Status: Modified Issued: 7th October 2010 Last Modified: 17th May 2015 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NW (S)	997	2	330053 344957
117	Licensed Waste Management Facilities (Locations) Licence Number: 37201 Location: Bangor Road, Johnstown, Wrexham, Clwyd, LL14 6ET Operator Name: Sita U K Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Co-disposal Landfill Sites Licence Status: Surrendered Issued: 30th April 1999 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 23rd May 2005 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	990	2	331110 345749
117	Licensed Waste Management Facilities (Locations) Licence Number: JP3294FV Location: Hafod Quarry Landfill, Wrexham, Clwyd, Wrexham, LL14 6ET Operator Name: Cory Environmental (Central) Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Household, Commercial And Industrial Waste Landfills Licence Status: Expired Issued: 8th March 2005 Last Modified: Not Supplied Expires: 8th October 2004 Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	993	2	331114 345752
117	Licensed Waste Management Facilities (Locations) Licence Number: 37286 Location: Bangor Road, Johnstown, Wrexham, Clwyd, LL14 6ET Operator Name: Cory Environmental (Central) Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Household, Commercial And Industrial Waste Landfills Licence Status: To PPC Issued: 8th March 2005 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: BS8621IW Positional Accuracy: Located by supplier to within 10m	A14SE (E)	993	2	331114 345752
	Local Authority Landfill Coverage Name: Wrexham County Borough Council - Has supplied landfill data		0	6	330116 345981
118	Potentially Infilled Land (Non-Water) Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A13SW (SW)	196	-	329982 345786
119	Potentially Infilled Land (Non-Water) Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A13SE (E)	280	-	330423 345940

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A18SW (NW)	424	-	329827 346341
121	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A9NW (SE)	537	-	330580 345640
122	Potentially Infilled Land (Non-Water) Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A12SE (SW)	550	-	329573 345742
123	Potentially Infilled Land (Non-Water) Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A14NW (NE)	632	-	330712 346301
124	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A12SW (W)	694	-	329402 345806
125	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A18NW (N)	726	-	329957 346721
126	Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A8SW (S)	749	-	330105 345202
127	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A12NW (W)	776	-	329328 346166
128	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NW (N)	799	-	330058 346808
129	Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A8SE (S)	861	-	330389 345125
130	Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A17SW (NW)	885	-	329275 346354
131	Potentially Infilled Land (Non-Water) Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A19SE (NE)	917	-	330973 346417
132	Potentially Infilled Land (Non-Water) Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A7SE (SW)	954	-	329561 345155
133	Potentially Infilled Land (Non-Water) Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A12SW (W)	959	-	329121 345933
134	Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A8SW (S)	986	-	329837 345001
135	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1879	A13NW (N)	48	-	330089 346056
136	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A13SW (SW)	192	-	329974 345795

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
137	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A18SE (NE)	367	-	330279 346352
138	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A12SE (SW)	429	-	329751 345681
139	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8NE (S)	521	-	330227 345436
140	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1879	A18SW (NW)	562	-	329807 346493
141	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1879	A18SE (N)	589	-	330243 346590
142	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A17SE (NW)	612	-	329582 346351
143	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A17SE (NW)	613	-	329610 346390
144	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1938	A14SW (E)	640	-	330743 345735
145	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A17SE (NW)	653	-	329528 346342
146	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A7NE (SW)	681	-	329673 345409
147	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1938	A19SE (NE)	859	-	330834 346531
148	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1879	A17NE (NW)	898	-	329496 346682
149	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A18NE (N)	914	-	330414 346884
150	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1938	A18NE (N)	937	-	330356 346922
151	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A12SW (W)	968	-	329133 345754
152	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A8SW (S)	980	-	329851 345004
153	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1879	A7SE (SW)	986	-	329447 345200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
154	Registered Landfill Sites Licence Holder: Watkin Jones & Son Ltd Licence Reference: NOW-513-L (L75) Site Location: Stryd Las Landfill, Between Stryd Las & Gutter Hill, Johnstown, Wrexham, Clwyd Licence Easting: 329900 Licence Northing: 346150 Operator Location: Foundry Building, Johnstown, WREXHAM, Clwyd, LL57 4YH Authority: Environment Agency Wales, North 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: Waste produced/controlled by licence holder Restrictions: Status: Site Closed Dated: 22nd July 1993 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: Gravels, Shales, Clays Hardcore And Rubble Max.Waste Permitted By Licence Top/Subsoil, Sand/Sandstone Uncontam.Bricks, Stone, Set Concrete Prohibited Waste: Biodegradable/Putrescible Waste Radioactive Wastes Waste In Drums	A13NW (NW)	236	3	329900 346150
155	Registered Landfill Sites Licence Holder: Shropshire Waste Management Ltd Licence Reference: EAWML37201 Site Location: Hafod Quarry, Ruabon, WREXHAM, Clwyd, LL14 6ET Licence Easting: 330760 Licence Northing: 345800 Operator Location: 107 Longden Road, SHREWSBURY, Shropshire, SY3 9DS Authority: Environment Agency Wales, North Area Site Category: Landfill Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Site not yet started Dated: 30th April 1999 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: Bonded Asbestos Degradable/Non-Degradable Commercial Waste Degradable/Non-Degradable Household Waste Degradable/Non-Degradable Industrial Waste Inert Waste Metal Waste/Scrap Metal (Only As Small Admixtures With Permitted Wastes)) Prohibited Waste: Liquid Wastes Material With Haz.Code H 1 - Explosive Material With Haz.Code H 2 - Oxidising Material With Haz.Code H 3a - Highly Flammable Material With Haz.Code H 3b - Flammable Material With Haz.Code H 9 - Infectious Material With Haz.Code H10 - Teratogenic Material With Haz.Code H11 - Mutagenic Material With Haz.Code H12 - Can Release Toxic Gases Material With Haz.Code H13 - May Yield Leachates With Haz.Code Properties Material With Haz.Code H14 - Ecotoxic Other Waste/Waste Not Otherwise Specified Packaged Waste (Mixed/Unmixed) Or Bulk Loose Container Waste Special Waste (As In Epa 1990:S62 Of 1996 Regs) Other Than	A14SW (E)	637	3	330760 345800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
156	Registered Waste Treatment or Disposal Sites Licence Holder: I Haywards Ltd Licence Reference: NOW-529-L Site Location: Gardden Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6RG Operator Location: Gardden Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6RG Authority: Environment Agency Wales, North Area Site Category: Scrapyard - with Transfer Station Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is known Dated: 31st March 1999 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste: Batteries Electrical Cable Electrical Equipment Engines Ferrous Metals Ferrous Swarf Machinery Max.Storage In Licence Max.Waste Permitted By Licence Non-Ferrous Metals Non-Ferrous Swarf Scrap Vehicles Structural Timber/Telegraph Poles/Railway Sleepers Prohibited Waste: Liquid Waste N.O.S. Spec.Waste (Epa'90:S62/1996 Regs)N.O.S Waste N.O.S.	A8SW (S)	801	3	330100 345150
157	Registered Waste Treatment or Disposal Sites Licence Holder: D Bennett - Clwyd Breakers Licence Reference: NOW-531-L Site Location: Gardden Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6RG Operator Location: Gardden Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6RG Authority: Environment Agency Wales, North Area Site Category: Scrapyard - with Transfer Station Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is known Dated: 31st March 1999 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Batteries Engines Ferrous Metals Max.Waste Permitted By Licence Non-Ferrous Metals Scrap Vehicles Structural Timber/Telegraph Poles/Railway Sleepers Transmission Units Prohibited Waste: Liquid Waste N.O.S. Spec.Waste (Epa'90:S62/1996 Regs)N.O.S Waste N.O.S.	A3NW (S)	994	3	330050 344960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Middle Coal Measures Formation And South Wales Middle Coal Measures Formation (Undifferentiated)	A13NE (N)	0	1	330116 345981
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A13NE (N)	0	1	330116 345981
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: <15 mg/kg Concentration:	A13SW (W)	124	1	329954 345965
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A7NE (SW)	499	1	329707 345624
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: <15 mg/kg Concentration:	A7SE (SW)	923	1	329524 345219
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 40 - 60 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A8SE (S)	957	1	330256 345000
158	BGS Recorded Mineral Sites Site Name: Wharf Cottage Sand Pit Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185619 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Glaciofluvial Deposits, Devensian Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A13SE (E)	287	1	330430 345937

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
159	BGS Recorded Mineral Sites Site Name: Brandie Pits Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172101 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	420	1	329814 345631
160	BGS Recorded Mineral Sites Site Name: Brandie Pits, Engine Pit Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172102 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	461	1	329762 345622
161	BGS Recorded Mineral Sites Site Name: Brandie Pits, No. 6 Pit Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172105 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	557	1	329565 345744
162	BGS Recorded Mineral Sites Site Name: Pant Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185635 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12NE (W)	603	1	329483 346045
163	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172108 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	707	1	329390 345800
163	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172106 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	747	1	329346 345813

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
163	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Stryl Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172112 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	747	1	329341 345843
164	BGS Recorded Mineral Sites Site Name: Pant Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185636 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	731	1	329349 345942
165	BGS Recorded Mineral Sites Site Name: Aber-Derlyn Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185633 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A18NW (N)	732	1	329950 346726
165	BGS Recorded Mineral Sites Site Name: Aber-Derlyn Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185634 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A18NW (N)	756	1	329947 346750
166	BGS Recorded Mineral Sites Site Name: Gardden Hall Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185660 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	762	1	329468 345501

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
167	BGS Recorded Mineral Sites Site Name: Brandie Pits, Park No. 1 Pit Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172103 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	767	1	329400 345600
168	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172111 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	801	1	329287 345843
169	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172107 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	806	1	329290 345792
170	BGS Recorded Mineral Sites Site Name: Vauxhall Colliery Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185620 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Etruria Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	840	1	330728 345349
171	BGS Recorded Mineral Sites Site Name: Hafod Location: Ruabon, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 4744 Type: Opencast Status: Dormant Operator: Cory Environmental Ltd. Operator Location: Not Supplied Periodic Type: Quaternary Geology: Glaciofluvial Deposits, Devensian Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	850	1	330880 345530
171	BGS Recorded Mineral Sites Site Name: Hafod Location: Ruabon, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 4744 Type: Opencast Status: Dormant Operator: Cory Environmental Ltd. Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Etruria Formation (Ruabon Marl Formation) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	850	1	330880 345530

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
172	BGS Recorded Mineral Sites Site Name: Pant Colliery Pit Location: Pant, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172110 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	856	1	329236 345813
173	BGS Recorded Mineral Sites Site Name: Brandie Pits, No. 2 Pit Location: Stryt Las, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172104 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	860	1	329308 345576
174	BGS Recorded Mineral Sites Site Name: Hafod Red Brick Works Clay Pits Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185621 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Etruria Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14SE (E)	882	1	330983 345690
175	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Pant, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172114 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	888	1	329228 345705
176	BGS Recorded Mineral Sites Site Name: Brandie Pits Shaft Location: Pant, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172115 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	890	1	329212 345759
176	BGS Recorded Mineral Sites Site Name: Pant Colliery Pit Location: Pant, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172109 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	909	1	329185 345794

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
176	BGS Recorded Mineral Sites Site Name: Pant Colliery Pit Location: Pant, Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 172113 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Red Coal (North Wales) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	918	1	329170 345832
177	BGS Recorded Mineral Sites Site Name: Pant Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185637 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A12SW (W)	969	1	329111 345930
178	BGS Recorded Mineral Sites Site Name: Ruabon Brick & Terra Cotta Works Location: Ruabon, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185654 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A8SW (S)	981	1	329833 345007
179	BGS Recorded Mineral Sites Site Name: Wheelwright'S Arms Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 185638 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	984	1	329254 345421
	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.	A13NE (N)	0	7	330116 345981
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (N)	0	-	330116 345981
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	124	1	329954 345965
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	125	1	330266 345931

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	247	1	330000 345722
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	160	1	330041 345801
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	187	1	330000 345787
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	185	1	329893 345971
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	1	330000 346173
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	1	330005 346175
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	80	1	330000 345981
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	125	1	330266 345931
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	166	1	330318 346010
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	1	330000 346173

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	1	330005 346175
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	330116 345981

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
180	Contemporary Trade Directory Entries Name: Ponciau Tyres Location: Cwm Glas, Johnstown, Wrexham, LL14 2AD Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SW (W)	0	-	330093 345976
181	Contemporary Trade Directory Entries Name: Paul Bell Location: Park St, Johnstown, Wrexham, Clwyd, LL14 2AB Classification: Lawnmowers & Garden Machinery - Sales & Service Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A13NW (NW)	91	-	330046 346088
182	Contemporary Trade Directory Entries Name: Tartan Domestics Location: High Street, Johnstown, Wrexham, Clwyd, LL14 2SH Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (N)	105	-	330108 346116
183	Contemporary Trade Directory Entries Name: Wrexham Sharpening Services Location: Plas yn Clawdd, Stryt Las, Johnstown, Wrexham, LL14 2AN Classification: Tool Sharpening, Repairing & Servicing Status: Active Positional Accuracy: Automatically positioned to the address	A13SW (SW)	139	-	330030 345826
184	Contemporary Trade Directory Entries Name: Cassini Blinds Wrexham Chester & Northwich Location: 3, Park Mews, Park Street, Johnstown, Wrexham, Clwyd, LL14 2AF Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (NW)	159	-	329968 346110
184	Contemporary Trade Directory Entries Name: Bellini Blinds Wrexham Location: 3, Park Mews, Park Street, Johnstown, Wrexham, LL14 2AF Classification: Blinds, Awnings & Canopies Status: Active Positional Accuracy: Automatically positioned to the address	A13NW (NW)	159	-	329967 346109
185	Contemporary Trade Directory Entries Name: Belle Blinds & Curtains Location: 36, Bangor Road, Johnstown, Wrexham, Clwyd, LL14 2SP Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NE (E)	161	-	330311 346034
186	Contemporary Trade Directory Entries Name: Pareck Ltd Location: High St, Ruabon, Wrexham, Clwyd, LL14 6BL Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A13NW (N)	170	-	330098 346180
187	Contemporary Trade Directory Entries Name: Bromfield Garage Location: Moreton Street, Johnstown, Wrexham, LL14 2AA Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (NW)	213	-	329958 346176
187	Contemporary Trade Directory Entries Name: Bromfield Garage Location: Moreton Street, Johnstown, Wrexham, LL14 2AA Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (NW)	213	-	329958 346176
187	Contemporary Trade Directory Entries Name: Bromfield Garage Location: Moreton Street, Johnstown, Wrexham, Clwyd, LL14 2AA Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A13NW (NW)	214	-	329958 346177
188	Contemporary Trade Directory Entries Name: Ronor Launderette Location: Maelor Road, Johnstown, Wrexham, Clwyd, LL14 1NB Classification: Dry Cleaners Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (NW)	355	-	329953 346335

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
188	Contemporary Trade Directory Entries Name: N S Cleaning Services Ltd Location: 19 Maelor Rd, Johnstown, Wrexham, Clwyd, LL14 1NB Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A18SW (NW)	386	-	329909 346349
189	Contemporary Trade Directory Entries Name: S T Jones Ltd Location: Gutter Hill, Johnstown, Wrexham, Clwyd, LL14 1LT Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A18SW (NW)	391	-	329894 346346
190	Contemporary Trade Directory Entries Name: Key Gas Wales Ltd Location: Hafod Road, Hafod Ind Est, Johnstown, Wrexham, Clwyd, LL14 2AT Classification: Gas Suppliers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A8NE (S)	419	-	330226 345540
191	Contemporary Trade Directory Entries Name: Eco Operative Location: Maes Isaf, Johnstown, Wrexham, LL14 1UU Classification: Heating Equipment - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (NE)	431	-	330427 346340
192	Contemporary Trade Directory Entries Name: Pro Control Location: 22, Gardden Road, Rhosllanerchrugog, Wrexham, Clwyd, LL14 2EW Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	458	-	329654 346154
192	Contemporary Trade Directory Entries Name: Pro Control Pest Services Location: 20, Gardden Road, Rhosllanerchrugog, WREXHAM, Clwyd, LL14 2EN Classification: Pest & Vermin Control Status: Active Positional Accuracy: Automatically positioned to the address	A12NE (NW)	489	-	329636 346192
193	Contemporary Trade Directory Entries Name: Wright'S Location: Gutter Hill, Johnstown, Wrexham, Clwyd, LL14 1LT Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A18SW (NW)	472	-	329823 346397
193	Contemporary Trade Directory Entries Name: T Evans Location: Gutter Hill, Johnstown, Wrexham, Clwyd, LL14 1LT Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	483	-	329848 346426
193	Contemporary Trade Directory Entries Name: Wrights Garage Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (NW)	484	-	329848 346427
193	Contemporary Trade Directory Entries Name: S C Jones Ltd Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (NW)	484	-	329848 346427
194	Contemporary Trade Directory Entries Name: Bridge Street Location: Brandie View, Stryl Las, Rhosllanerchrugog, Wrexham, Clwyd, LL14 2HD Classification: Washing Machines - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SE (SW)	479	-	329640 345765
195	Contemporary Trade Directory Entries Name: Ceramtec Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HY Classification: Ceramic Manufacturers, Supplies & Services Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	485	-	330470 345594

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
196	Contemporary Trade Directory Entries Name: Sci-Mart Location: Unit 1, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Scientific Apparatus & Instruments - Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address	A8NE (S)	500	-	330306 345478
196	Contemporary Trade Directory Entries Name: Celantic North Wales Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Marine Equipment & Supplies Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (S)	500	-	330306 345478
196	Contemporary Trade Directory Entries Name: Brother Industries Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Plastics - Injection Moulding Status: Active Positional Accuracy: Automatically positioned to the address	A8NE (S)	505	-	330306 345473
197	Contemporary Trade Directory Entries Name: Safehouse Building Location: Tonbridge, Wrexham Road, Johnstown, Wrexham, Clwyd, LL14 1PA Classification: Damp & Dry Rot Control Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (N)	554	-	330095 346564
198	Contemporary Trade Directory Entries Name: Cs Paint Body & Repair Location: Unit 7, Aberderfyn Works, Aberderfyn Road, Johnstown, Wrexham, Clwyd, LL14 1PB Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	570	-	329865 346532
198	Contemporary Trade Directory Entries Name: Johnson'S Tyres & Exhausts Location: Unit A, Aberderfyn Works, Aberderfyn Road, Johnstown, Wrexham, Clwyd, LL14 1PB Classification: Alloys Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	590	-	329870 346556
199	Contemporary Trade Directory Entries Name: Fry Fresh Edible Oils Ltd Location: Wrexham, LL14 6HA Classification: Distribution Services Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	578	-	330531 345523
199	Contemporary Trade Directory Entries Name: Steni Uk Ltd Location: Unit 1-4, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Cladding Suppliers & Installers Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	595	-	330509 345483
200	Contemporary Trade Directory Entries Name: Tan Y Clawdd Motors Location: Wrexham Road, Johnstown, Wrexham, Clwyd, LL14 1PA Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	-	330122 346609
200	Contemporary Trade Directory Entries Name: M D P Scaffolding Location: Wrexham Road, Johnstown, Wrexham, Clwyd, LL14 1PA Classification: Scaffolding & Work Platforms Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	-	330122 346609
200	Contemporary Trade Directory Entries Name: Snax 24 Ltd Location: Wrexham Road, Johnstown, Wrexham, Clwyd, LL14 1PA Classification: Petrol Filling Stations - 24 Hour Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	-	330122 346609

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
200	Contemporary Trade Directory Entries Name: Tan Y Clawdd Car Sales Location: Wrexham Road, Johnstown, Wrexham, Clwyd, LL14 1PA Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	-	330122 346609
200	Contemporary Trade Directory Entries Name: B P Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SE (N)	600	-	330121 346610
200	Contemporary Trade Directory Entries Name: B P Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Classification: Petrol Filling Stations Status: Active Positional Accuracy: Manually positioned to the address or location	A18SE (N)	602	-	330120 346612
201	Contemporary Trade Directory Entries Name: T T S Van Hire Location: The Coach Yard, Aberderyn Road, Ponciau, Wrexham, Clwyd, LL14 1SL Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (N)	619	-	329965 346614
202	Contemporary Trade Directory Entries Name: Clwyd Spares & Repairs Ltd Location: Unit 13, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Car Breakers & Dismantlers Status: Active Positional Accuracy: Automatically positioned to the address	A8NE (S)	634	-	330337 345347
202	Contemporary Trade Directory Entries Name: Enviroclear Site Services Ltd Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Waste Disposal Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (SE)	639	-	330376 345356
202	Contemporary Trade Directory Entries Name: Danisco Pack Langfern Location: Unit 13 Vauxhall Indust Est, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Boxes & Cartons Status: Inactive Positional Accuracy: Manually positioned to the address or location	A8NE (S)	639	-	330376 345356
202	Contemporary Trade Directory Entries Name: Environclear Site Services Ltd Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Waste Disposal Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (SE)	639	-	330376 345356
203	Contemporary Trade Directory Entries Name: Portec Rail Products Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6UY Classification: Materials Handling Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (SE)	648	-	330442 345376
204	Contemporary Trade Directory Entries Name: North Wales Tyres & Exhausts Location: Aberderyn Rd, Johnstown, Wrexham, Clwyd, LL14 1PB Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A18SW (N)	650	-	329866 346618
204	Contemporary Trade Directory Entries Name: Mark Harvey Location: Ty Briallen, Aberderyn Road, Ponciau, Wrexham, Clwyd, LL14 1SL Classification: Damp & Dry Rot Control Status: Inactive Positional Accuracy: Automatically positioned to the address	A18SW (NW)	661	-	329842 346620
205	Contemporary Trade Directory Entries Name: A W Services North West Ltd Location: Unit 8a, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Powder Coatings Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	658	-	330538 345425

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
205	Contemporary Trade Directory Entries Name: A W Services Northwest Ltd Location: Unit 8a, Vauxhall Industrial Estate, Ruabon, WREXHAM, Clwyd, LL14 6HA Classification: Powder Coatings Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	659	-	330544 345429
206	Contemporary Trade Directory Entries Name: No Limits Location: 9, Aberderfyn Road, Ponciau, WREXHAM, Clwyd, LL14 1SL Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A18SW (NW)	681	-	329806 346626
207	Contemporary Trade Directory Entries Name: Lafarge Aggregates Location: Vauxhall Ind Est, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Concrete & Mortar Ready Mixed Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A8SE (S)	682	-	330327 345294
208	Contemporary Trade Directory Entries Name: G H A Coaches Location: Unit 11, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Bus & Coach Operators & Stations Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (SE)	721	-	330419 345284
208	Contemporary Trade Directory Entries Name: G H A Coaches Ltd Location: Unit 11, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Bus & Coach Operators & Stations Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (SE)	721	-	330419 345284
208	Contemporary Trade Directory Entries Name: Vale Of Llangollen Travel Ltd Location: Unit 11, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Bus & Coach Operators & Stations Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (SE)	732	-	330414 345270
208	Contemporary Trade Directory Entries Name: Thompson Coating Solutions Ltd Location: Unit 2 Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Coating Specialists Status: Active Positional Accuracy: Manually positioned within the geographical locality	A8SE (SE)	733	-	330414 345270
209	Contemporary Trade Directory Entries Name: A & C Precision Engineering Location: Aberderfyn Farm, Aberderfyn Road, Johnstown, Wrexham, Clwyd, LL14 1PB Classification: Precision Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	727	-	330105 346737
209	Contemporary Trade Directory Entries Name: T Davies & Sons Location: Aberderfyn Farm, Aberderfyn Road, Johnstown, Wrexham, LL14 1PB Classification: Agricultural Merchants Status: Active Positional Accuracy: Automatically positioned to the address	A18NW (N)	731	-	330103 346742
210	Contemporary Trade Directory Entries Name: Williams Location: Unit 9, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Commercial Vehicle Bodybuilders & Repairers Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	736	-	330527 345323
211	Contemporary Trade Directory Entries Name: S G Blast Cleaning Location: Bro-Hedd, Clarke Street, Ponciau, Wrexham, LL14 1RT Classification: Blast Cleaning Status: Active Positional Accuracy: Automatically positioned to the address	A17SE (NW)	770	-	329613 346612
211	Contemporary Trade Directory Entries Name: D G Jones Location: Brynford, Walkers Lane, Ponciau, Wrexham, Clwyd, LL14 1RY Classification: Fuel Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	792	-	329631 346654

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
212	Contemporary Trade Directory Entries Name: Flinting Ink Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HU Classification: Printing Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address	A8SE (S)	807	-	330409 345189
213	Contemporary Trade Directory Entries Name: Rob @ P & G Motors Location: Hill Street, Rhosllanerchrugog, WREXHAM, Clwyd, LL14 1LN Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	829	-	329301 346268
213	Contemporary Trade Directory Entries Name: Roberts Pies Location: 8-10, Hill Street, Rhosllanerchrugog, Wrexham, Clwyd, LL14 1LN Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	847	-	329278 346253
214	Contemporary Trade Directory Entries Name: Manutech (Europe) Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Electronic Component Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	833	-	330227 345121
214	Contemporary Trade Directory Entries Name: Clwyd Screen Prints Ltd Location: Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Screen Process Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	833	-	330227 345121
214	Contemporary Trade Directory Entries Name: Sci Mart Location: Unit 2, Vauxhall Industrial Estate, Ruabon, Wrexham, Clwyd, LL14 6HA Classification: Scientific Apparatus & Instruments - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	833	-	330227 345121
215	Contemporary Trade Directory Entries Name: Heritage Studio 81 Ltd Location: 5, Emlyn Terrace, Chapel Street, Ponciau, Wrexham, Clwyd, LL14 1SB Classification: Greeting Card Publishers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address	A17NE (NW)	879	-	329599 346737
216	Contemporary Trade Directory Entries Name: Elite Graphics Uk Ltd Location: Unit 18, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Car Customisation & Conversion Specialists Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	900	-	330271 345059
217	Contemporary Trade Directory Entries Name: Gavin Pye Location: Croeso, Fennant Road, Ponciau, Wrexham, Clwyd, LL14 1HL Classification: French Polishing Status: Inactive Positional Accuracy: Automatically positioned to the address	A18NW (N)	903	-	329820 346869
218	Contemporary Trade Directory Entries Name: Advance Spares Location: Unit 21, Vauxhall Industrial Estate, Wrexham, LL14 6HA Classification: Nuts, Bolts & Fixings Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	922	-	330440 345078
219	Contemporary Trade Directory Entries Name: A E Sewing Machines Location: Unit 20a, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Sewing Machines - Industrial Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	932	-	330395 345053

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
219	Contemporary Trade Directory Entries Name: A E Sewing Machines Location: Unit 1, Vauxhall Court, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Sewing Machines - Industrial Status: Inactive Positional Accuracy: Automatically positioned to the address	A8SE (S)	932	-	330395 345053
219	Contemporary Trade Directory Entries Name: Sutures Ltd Location: Unit 19, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Classification: Medical Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address	A8SE (S)	933	-	330357 345042
219	Contemporary Trade Directory Entries Name: Advance Enterprises Location: Unit 2, Vauxhall Court, Vauxhall Industrial Estate, Wrexham, LL14 6HA Classification: Sewing Machines - Industrial Status: Active Positional Accuracy: Automatically positioned to the address	A8SE (S)	949	-	330395 345035
220	Contemporary Trade Directory Entries Name: G G Jones Contractors Location: Bradfield, Church Street, Rhosllanerchrugog, Wrexham, Clwyd, LL14 2BP Classification: Asphalt & Coated Macadam Laying Contractors Status: Active Positional Accuracy: Automatically positioned to the address	A12NW (W)	933	-	329151 346043
221	Contemporary Trade Directory Entries Name: I Hayward Ltd Location: Scrap Metal Depot, Gardden Industrial Estate, Tatham Road, Wrexham, LL14 6RG Classification: Scrap Metal Merchants Status: Active Positional Accuracy: Automatically positioned to the address	A8SW (S)	954	-	330039 345001
222	Contemporary Trade Directory Entries Name: Travis Perkins Plc Location: Ruabon Road, Ruabon, Wrexham, LL14 6RA Classification: Builders' Merchants Status: Active Positional Accuracy: Automatically positioned to the address	A8SE (S)	978	-	330213 344974
223	Contemporary Trade Directory Entries Name: Tygol Chi Location: Berlin House, Market Street, Rhosllanerchrugog, Wrexham, Clwyd, LL14 2HY Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NW (W)	997	-	329133 346293
224	Fuel Station Entries Name: Rss Wrexham Road Location: Wrexham Road, Johnstown, Wrexham, Wrexham, LL14 1PA Brand: Bp Premises Type: Petrol Station Status: Open Positional Accuracy: Automatically positioned to the address	A18SE (N)	599	-	330122 346609
225	Fuel Station Entries Name: The Garage Location: Hill Street, Rhosllanerchrugog, Wrexham, Wrexham, LL14 1LN Brand: OBSOLETE Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Manually positioned to the address or location	A12NW (W)	828	-	329301 346263
226	Points of Interest - Commercial Services Name: Bromfield Garage Location: Moreton Street, Johnstown, Wrexham, LL14 2AA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	214	8	329958 346177
226	Points of Interest - Commercial Services Name: Bromfield Garage Location: Moreton Street, Johnstown, Wrexham, LL14 2AA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	214	8	329958 346177

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
227	Points of Interest - Commercial Services Name: Tudor Evans Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	483	8	329848 346426
227	Points of Interest - Commercial Services Name: Evans Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	483	8	329848 346426
227	Points of Interest - Commercial Services Name: Wrights Garage Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	483	8	329848 346426
227	Points of Interest - Commercial Services Name: Wrights Garage Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	483	8	329848 346426
227	Points of Interest - Commercial Services Name: Wrights Garage Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	484	8	329847 346427
227	Points of Interest - Commercial Services Name: S C Jones Ltd Location: Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	484	8	329847 346427
228	Points of Interest - Commercial Services Name: Pro Control Pest Services Location: 20 Gardden Road, Rhoslanerchrugog, Wrexham, LL14 2EN Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A12NE (NW)	489	8	329635 346191
229	Points of Interest - Commercial Services Name: Fry Fresh Edible Oils Ltd Location: Unit 1, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NE (S)	501	8	330305 345477
230	Points of Interest - Commercial Services Name: Cs Paint Body & Repair Location: Unit 7 Aberderfyn Works, Aberderfyn Road, Johnstown, Wrexham, LL14 1PB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	570	8	329865 346532
231	Points of Interest - Commercial Services Name: Rss Wrexham Road Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
231	Points of Interest - Commercial Services Name: B P Car Wash Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
231	Points of Interest - Commercial Services Name: Tan-Y-Clawdd Motors Ltd Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
231	Points of Interest - Commercial Services Name: Car Wash Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
231	Points of Interest - Commercial Services Name: Tan Y Clawdd Motors Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (N)	602	8	330090 346612
232	Points of Interest - Commercial Services Name: T T S Van Hire Location: The Coach Yard, Aberderfyn Road, Ponciau, Wrexham, LL14 1SL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (N)	619	8	329965 346614
233	Points of Interest - Commercial Services Name: Clwyd Spares & Repairs Ltd Location: Unit 13, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A8NE (S)	635	8	330337 345346
233	Points of Interest - Commercial Services Name: Enviroclear Services Ltd Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NE (S)	639	8	330376 345356
234	Points of Interest - Commercial Services Name: No Limits Location: 9 Aberderfyn Road, Ponciau, Wrexham, LL14 1SL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	680	8	329806 346626
235	Points of Interest - Commercial Services Name: P & G Motors Ltd Location: Hill Street, Rhosllanerchrugog, Wrexham, LL14 1LN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	829	8	329301 346268
235	Points of Interest - Commercial Services Name: Rob @ P & G Motors Location: 13 Hill Street, Rhosllanerchrugog, Wrexham, LL14 1LN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NW (W)	837	8	329289 346255
236	Points of Interest - Commercial Services Name: Scrap Yard Location: LL14 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A8SW (S)	846	8	330045 345109
236	Points of Interest - Commercial Services Name: Scrap Yard Location: Not Supplied Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	883	8	329987 345078
237	Points of Interest - Commercial Services Name: Scrap Yard Location: LL14 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A8SW (S)	914	8	330042 345041
237	Points of Interest - Commercial Services Name: I Hayward Ltd Location: Scrap Metal Depot Gardden Industrial Estate, Tatham Road, Wrexham, LL14 6RG Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A8SW (S)	954	8	330039 345001

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
237	Points of Interest - Commercial Services Name: I Hayward Ltd Location: Gardden Industrial Estate, Ruabon, Wrexham, LL14 6RG Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A8SW (S)	967	8	330063 344986
237	Points of Interest - Commercial Services Name: Scrap Yard Location: LL14 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A3NW (S)	996	8	330037 344959
238	Points of Interest - Manufacturing and Production Name: Factory Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	0	8	330101 345970
238	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (N)	0	8	330125 346006
238	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	0	8	330112 345970
238	Points of Interest - Manufacturing and Production Name: Factory Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (N)	0	8	330124 346010
239	Points of Interest - Manufacturing and Production Name: K H Thompson Location: Brandy, Ruabon, Wrexham, LL14 6RB Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A8NW (SW)	501	8	329842 345515
240	Points of Interest - Manufacturing and Production Name: Works Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	549	8	329877 346514
240	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	583	8	329869 346547
240	Points of Interest - Manufacturing and Production Name: Factory Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	584	8	329869 346548
241	Points of Interest - Manufacturing and Production Name: Shaft Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A12NE (W)	600	8	329487 346050
241	Points of Interest - Manufacturing and Production Name: Shaft Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	602	8	329486 346054

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
242	Points of Interest - Manufacturing and Production Name: Vauxhall Industrial Estate Location: LL14 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	605	8	330241 345353
243	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	698	8	330371 345291
244	Points of Interest - Manufacturing and Production Name: Shaft Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	738	8	329950 346732
245	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	771	8	330222 345183
245	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	772	8	330232 345183
245	Points of Interest - Manufacturing and Production Name: Tanks Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	777	8	330226 345177
245	Points of Interest - Manufacturing and Production Name: Vauxhall Business Centre Location: LL14 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	860	8	330212 345093
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	809	8	330328 345163
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	812	8	330328 345160
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	814	8	330327 345157
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	817	8	330327 345154
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	824	8	330329 345148

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	829	8	330324 345141
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	830	8	330327 345141
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	833	8	330324 345137
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	834	8	330333 345138
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	834	8	330327 345137
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	834	8	330338 345139
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	842	8	330324 345128
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	843	8	330337 345130
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	843	8	330328 345128
246	Points of Interest - Manufacturing and Production Name: Tanks Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	843	8	330354 345134
246	Points of Interest - Manufacturing and Production Name: Tank Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A8SE (S)	848	8	330337 345125
247	Points of Interest - Manufacturing and Production Name: Tanks Location: LL14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	820	8	330944 346221

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
248	Points of Interest - Manufacturing and Production Name: Hafod Quarry (Dis) Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	885	8	330939 345568
249	Points of Interest - Manufacturing and Production Name: Clay Pit Location: LL14 Category: Extractive Industries Class Code: Sand, Gravel and Clay Extraction and Merchants Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	942	8	330943 345456
250	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	952	8	331090 346169
250	Points of Interest - Manufacturing and Production Name: Works Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	954	8	331092 346168
251	Points of Interest - Manufacturing and Production Name: Ruabon - Landfill Gas (DECC) Location: Gardden Lodge Landfill Site, Tatham Road, Ruabon, Wrexham, LL14 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	960	8	330000 345000
252	Points of Interest - Manufacturing and Production Name: Clay Pit Location: LL14 Category: Extractive Industries Class Code: Sand, Gravel and Clay Extraction and Merchants Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	986	8	331042 345550
253	Points of Interest - Public Infrastructure Name: Johnstown Fire Station Location: Fire Station, Gutter Hill, Johnstown, Wrexham, LL14 1LT Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A18SW (NW)	471	8	329823 346396
254	Points of Interest - Public Infrastructure Name: Slurry Lagoon Location: LL14 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	521	8	329768 345538
255	Points of Interest - Public Infrastructure Name: BP Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
255	Points of Interest - Public Infrastructure Name: BP Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
255	Points of Interest - Public Infrastructure Name: Snax 24 Wrexham Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609
255	Points of Interest - Public Infrastructure Name: BP Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (N)	599	8	330122 346609

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
255	Points of Interest - Public Infrastructure Name: BP Service Station Location: Wrexham Road, Johnstown, Wrexham, LL14 1PA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (N)	602	8	330120 346612
256	Points of Interest - Public Infrastructure Name: Environclear Site Services Ltd Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A8NE (SE)	639	8	330376 345356
256	Points of Interest - Public Infrastructure Name: Environclear Site Services Ltd Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A8NE (SE)	639	8	330376 345356
256	Points of Interest - Public Infrastructure Name: Environclear Site Services Location: Unit 12, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A8NE (SE)	639	8	330376 345356
256	Points of Interest - Public Infrastructure Name: Bryn Melyn Ltd Location: Unit 10, Vauxhall Industrial Estate, Wrexham, LL14 6HA Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A8NE (SE)	648	8	330439 345375
256	Points of Interest - Public Infrastructure Name: G H A Coaches Location: Unit 11, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A8SE (SE)	721	8	330419 345284
256	Points of Interest - Public Infrastructure Name: G H A Coaches Location: Unit 11, Vauxhall Industrial Estate, Ruabon, Wrexham, LL14 6HA Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A8SE (SE)	721	8	330419 345284
257	Points of Interest - Public Infrastructure Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	725	8	329355 345962
257	Points of Interest - Public Infrastructure Name: Cemetery Location: LL14 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	725	8	329355 345962
257	Points of Interest - Public Infrastructure Name: Cemetery Location: LL14 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	728	8	329354 346014
258	Points of Interest - Public Infrastructure Name: Spoil Heap Location: LL14 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	909	8	331060 345969
258	Points of Interest - Public Infrastructure Name: Tip Location: LL14 Category: Infrastructure and Facilities Class Code: Refuse Disposal Facilities Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	912	8	331064 346014

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
259	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SW (W)	284	8	329796 345952
260	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NW (NW)	289	8	329851 346172
261	Points of Interest - Recreational and Environmental Name: Childrens Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	330	8	330357 345700
261	Points of Interest - Recreational and Environmental Name: Childrens Playground Location: (Heol Kenyon), LL14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13SE (SE)	331	8	330356 345698
262	Points of Interest - Recreational and Environmental Name: Play Area Location: LL14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	504	8	330593 346253
262	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	506	8	330594 346255
263	Points of Interest - Recreational and Environmental Name: Playground Location: Clarke Street (Stryt Clarke), LL14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A17SE (NW)	826	8	329463 346546
263	Points of Interest - Recreational and Environmental Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17SE (NW)	860	8	329466 346600
263	Points of Interest - Recreational and Environmental Name: Playground Location: School Lane (Lon Yr Ysgol), LL14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A17NE (NW)	914	8	329466 346676

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
264	Ancient Woodland Name: Not Supplied Reference: 31876 Area(m²): 5182.72 Type: Ancient and Semi-Natural Woodland	A8NW (SW)	399	2	329913 345594
265	Ancient Woodland Name: Not Supplied Reference: 31877 Area(m²): 11727 Type: Ancient and Semi-Natural Woodland	A7NE (SW)	488	2	329708 345640
266	Ancient Woodland Name: Not Supplied Reference: 31872 Area(m²): 14323.18 Type: Ancient and Semi-Natural Woodland	A8SW (S)	769	2	330029 345189
267	Ancient Woodland Name: Not Supplied Reference: 36790 Area(m²): 3231.92 Type: Restored Ancient Woodland Site	A8SE (S)	805	2	330159 345145
268	Sites of Special Scientific Interest Name: Stryl Las Ar Hafod Multiple Areas: Y Total Area (m2): 697177.17 Source: Natural Resources Wales Reference: 137631wsp Designation Details: Biological Designation Date: 27th November 1997 Date Type: Notified	A13SW (W)	84	2	329995 345973
269	Special Areas of Conservation Name: Johnstown Newt Sites Multiple Areas: Y Total Area (m2): 697177.17 Source: Natural Resources Wales Reference: Uk0030173 Status: Designated	A13SW (W)	84	2	329995 345973

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Wrexham County Borough Council - Public Protection Department Denbighshire County Council - Public Protection Department	April 2016 January 2015	Annually Annual Rolling Update
Discharge Consents Environment Agency - Welsh Region Environment Agency - Midlands Region Natural Resources Wales	August 2014 January 2020 January 2020	Quarterly Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	Annual Rolling Update
Integrated Pollution Controls Environment Agency - Welsh Region	October 2008	Variable
Integrated Pollution Prevention And Control Environment Agency - Welsh Region Natural Resources Wales	January 2020 January 2020	Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Wrexham County Borough Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 March 2013	Variable Variable
Local Authority Pollution Prevention and Controls Wrexham County Borough Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 December 2014	Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Wrexham County Borough Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 December 2014	Variable Variable
Nearest Surface Water Feature Ordnance Survey	February 2020	
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Registered Radioactive Substances Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	Annually
Substantiated Pollution Incident Register Environment Agency Wales - North Area Natural Resources Wales	January 2020 January 2020	Quarterly Quarterly
Water Abstractions Environment Agency - Welsh Region Natural Resources Wales	April 2020 April 2020	Quarterly Quarterly
Water Industry Act Referrals Natural Resources Wales Environment Agency - Welsh Region	January 2020 October 2017	Quarterly Quarterly
Groundwater Vulnerability Map Natural Resources Wales	June 2018	As notified
Bedrock Aquifer Designations Natural Resources Wales	January 2018	Annually
Superficial Aquifer Designations Natural Resources Wales	January 2018	Annually

Agency & Hydrological	Version	Update Cycle
Source Protection Zones Natural Resources Wales	November 2016	Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	August 2019	Quarterly
Flooding from Rivers or Sea without Defences Natural Resources Wales	May 2020	Quarterly
Areas Benefiting from Flood Defences Natural Resources Wales	November 2019	Quarterly
Flood Water Storage Areas Natural Resources Wales	August 2019	Quarterly
Flood Defences Natural Resources Wales	November 2019	Quarterly
OS Water Network Lines Ordnance Survey	January 2020	Quarterly
Surface Water 1 in 30 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Natural Resources Wales	October 2013	Annually
Surface Water Suitability Natural Resources Wales	October 2013	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	June 1996	Not Applicable
Historical Landfill Sites Natural Resources Wales	July 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - North Area Natural Resources Wales	November 2019 November 2019	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - North Area Natural Resources Wales	January 2020 January 2020	Quarterly Quarterly
Local Authority Landfill Coverage Denbighshire County Council - Environmental Health Department Wrexham County Borough Council	May 2000 May 2000	Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Wrexham County Borough Council Denbighshire County Council - Environmental Health Department	June 2003 May 2000	Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency Wales - North Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - North Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - North Area	March 2003	Not Applicable
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	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Denbighshire County Council - Planning Department Wrexham County Borough Council - Planning Department	February 2016 February 2016	Variable Variable
Planning Hazardous Substance Consents Denbighshire County Council - Planning Department Wrexham County Borough Council - Planning Department	February 2016 February 2016	Variable 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	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	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	January 2019	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	January 2020	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2020	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	March 2020	Quarterly
Points of Interest - Education and Health PointX	March 2020	Quarterly
Points of Interest - Manufacturing and Production PointX	March 2020	Quarterly
Points of Interest - Public Infrastructure PointX	March 2020	Quarterly
Points of Interest - Recreational and Environmental PointX	March 2020	Quarterly
Underground Electrical Cables National Grid	October 2019	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural Resources Wales	August 2018	Bi-Annually
Areas of Adopted Green Belt Denbighshire County Council Wrexham County Borough Council	February 2020 February 2020	As notified As notified
Areas of Unadopted Green Belt Denbighshire County Council Wrexham County Borough Council	February 2020 February 2020	As notified As notified
Areas of Outstanding Natural Beauty Natural Resources Wales	June 2019	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Denbighshire County Council Wrexham County Borough Council	August 2018 August 2018	Bi-Annually Bi-Annually
Marine Nature Reserves Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves Natural Resources Wales	June 2019	Bi-Annually
National Parks Natural Resources Wales	August 2018	Annually
Nitrate Vulnerable Zones Natural Resources Wales The National Assembly for Wales - GI Services (Department of Planning & Countryside)	July 2019 October 2005	Bi-Annually
Ramsar Sites Natural Resources Wales	July 2019	Bi-Annually
Sites of Special Scientific Interest Natural Resources Wales	March 2020	Bi-Annually
Special Areas of Conservation Natural Resources Wales	August 2018	Bi-Annually
Special Protection Areas Natural Resources Wales	August 2018	Bi-Annually

A selection of organisations who provide data within this report

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

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	Natural Resources Wales Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	Wrexham County Borough Council - Environmental Health Department Crown Buildings, P O Box 1297, Wrexham, Clwyd, LL13 8ZE	Telephone: 01978 297038 Fax: 01978 292502 Website: www.wrexham.gov.uk
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	Wrexham County Borough Council Lampet Street, Guildhall, Wrexham, Clwyd, LL11 1WL	Telephone: 01978 292000 Fax: 01978 292502 Website: www.wrexham.gov.uk
7	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
8	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
-	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.

Groundwater Vulnerability



Site Sensitivity Context Map - Slice A

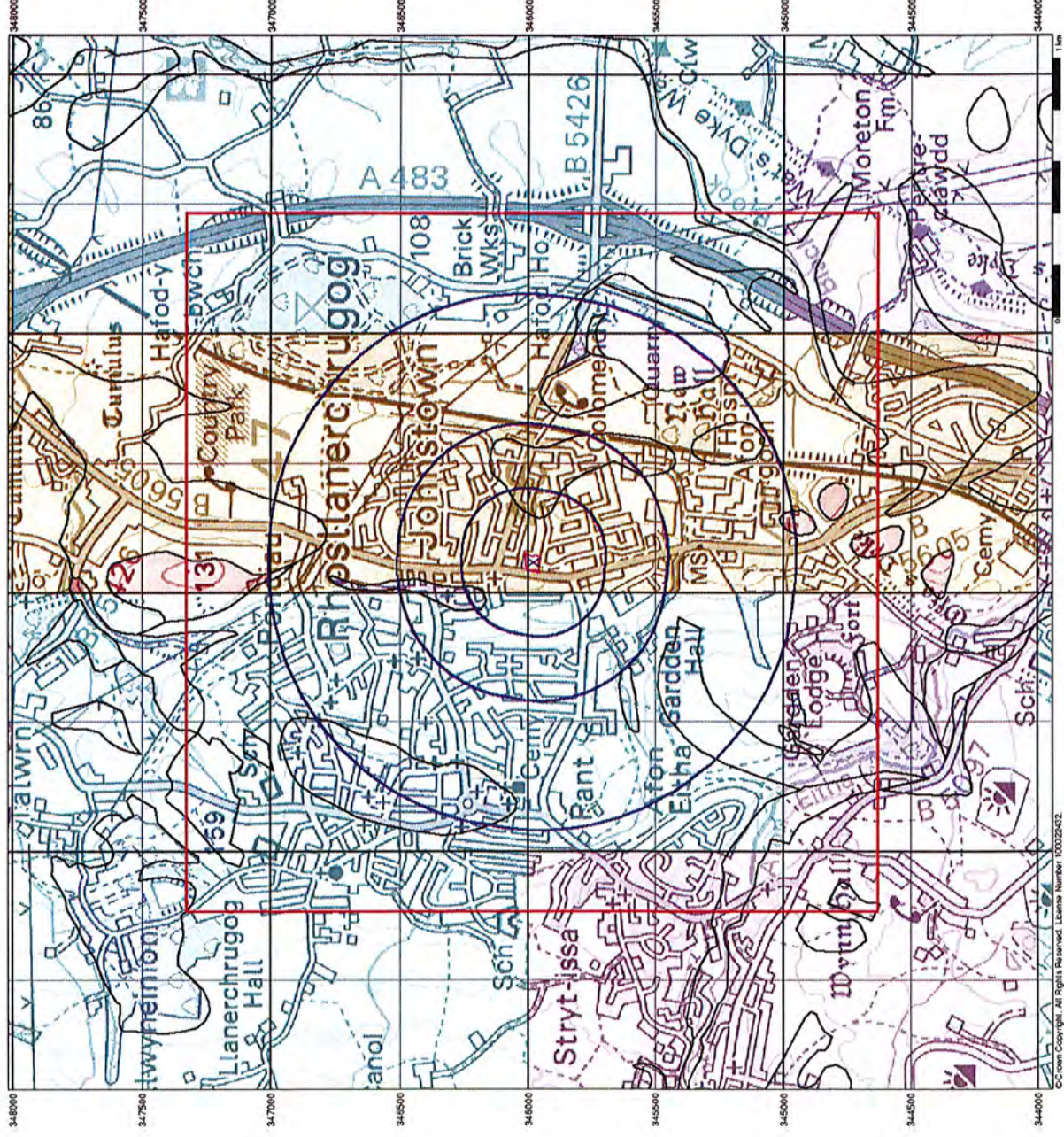


Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363/sci
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU



Bedrock Aquifer Designation

General			
	Specified Site		Specified Buffer(s)
	Size		Map ID
			Bearing Reference Point

Agency and Hydrological

Geological Classes

Principal Aquifer

Secondary A Aquifer

Secondary B Aquifer

Secondary Undifferentiated

Unproductive Strata

Uniklinik

Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

Order Details
Order Number: 242556643_1_1Customer Ref: 2363/sdl
National Grid Reference: 220400 245000

National Grid Reference: 330120, 345980
 Slice: A

Site Area (Ha):	0.34
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Search Buffer (m): 1000

Site Details

Site Details

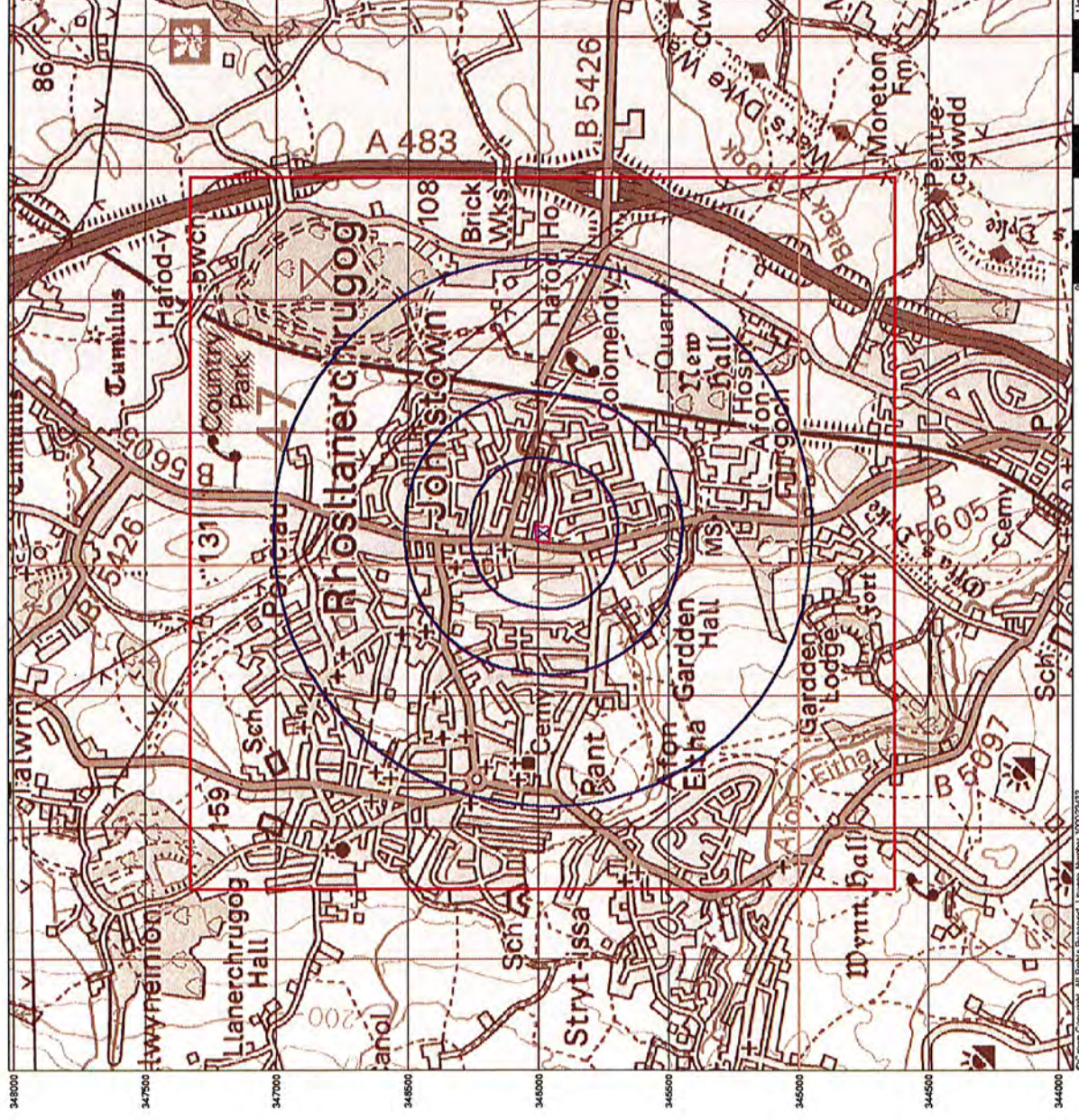
Site Details
Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown,
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Superficial Aquifer Designation



Site Sensitivity Context Map - Slice A

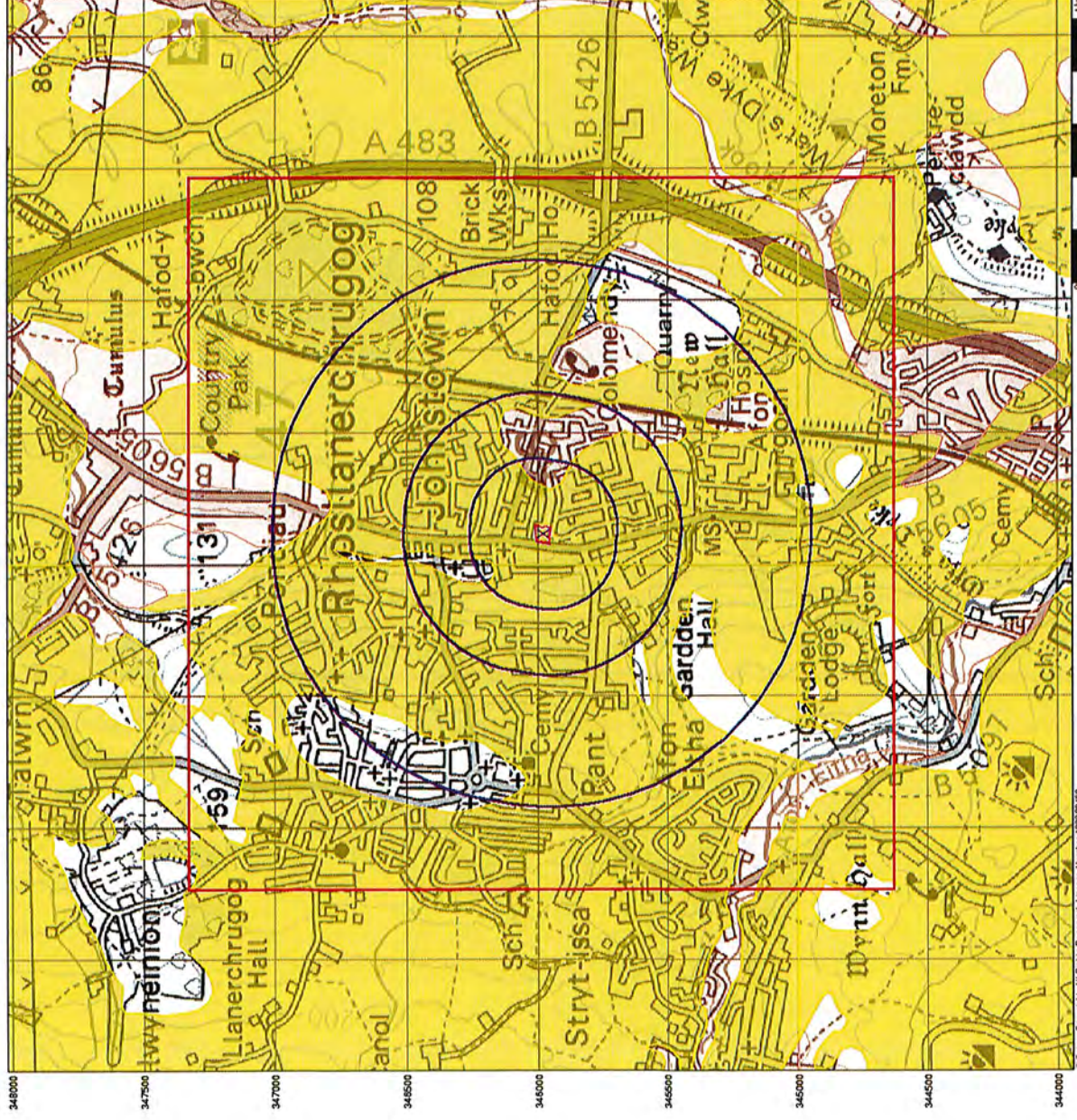


Order Details

Order Number: 242558643_1_1
 Customer Ref: 2363/rdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown,
 Wrexham, LL14 6PU



Source Protection Zones

General

Specified Site Specified Buffer(s) Bearing Reference Point

Site Map ID

Agency and Hydrological

Inner zone (Zone 1)

Inner zone - subsurface activity only (Zone 1c)

Outer zone (Zone 2)

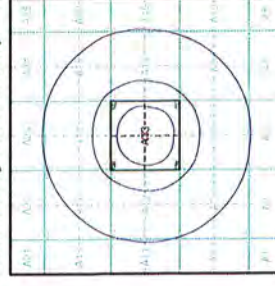
Outer zone - subsurface activity only (Zone 2c)

Total catchment (Zone 3)

Total catchment - subsurface activity only (Zone 3c)

Special interest (Zone 4)

Site Sensitivity Context Map - Slice A

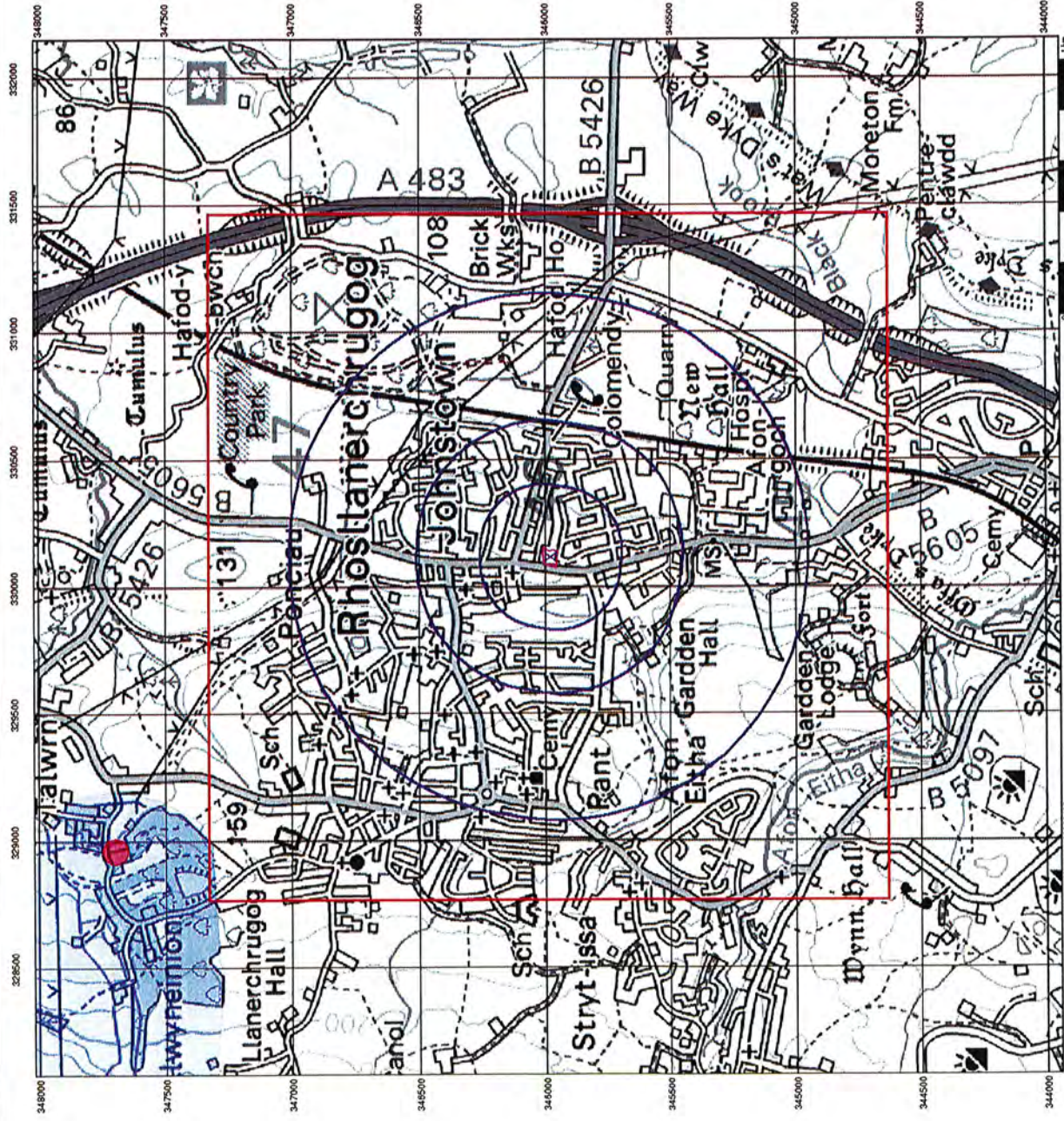


Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363 SdI
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown,
 Wrexham, LL14 6PU



Sensitive Land Uses

- General**
- Specified Site
 - Specified Buffers
 - Map ID
 - Bearing Reference Point
- Sensitive Land Uses**
- National Park
 - Nature Sensitive Area
 - Nature Vulnerable Zone
 - Ramsar Site
 - Site of Special Scientific Interest
 - Special Area of Conservation
 - Special Protection Area
 - World Heritage Sites
 - Ancient Woodland
 - Area of Adopted Green Belt
 - Area of Outstanding Natural Beauty
 - Environmentally Sensitive Area
 - Forest Park
 - Local Nature Reserve
 - Marine Nature Reserve
 - National Nature Reserve

Site Sensitivity Context Map - Slice A

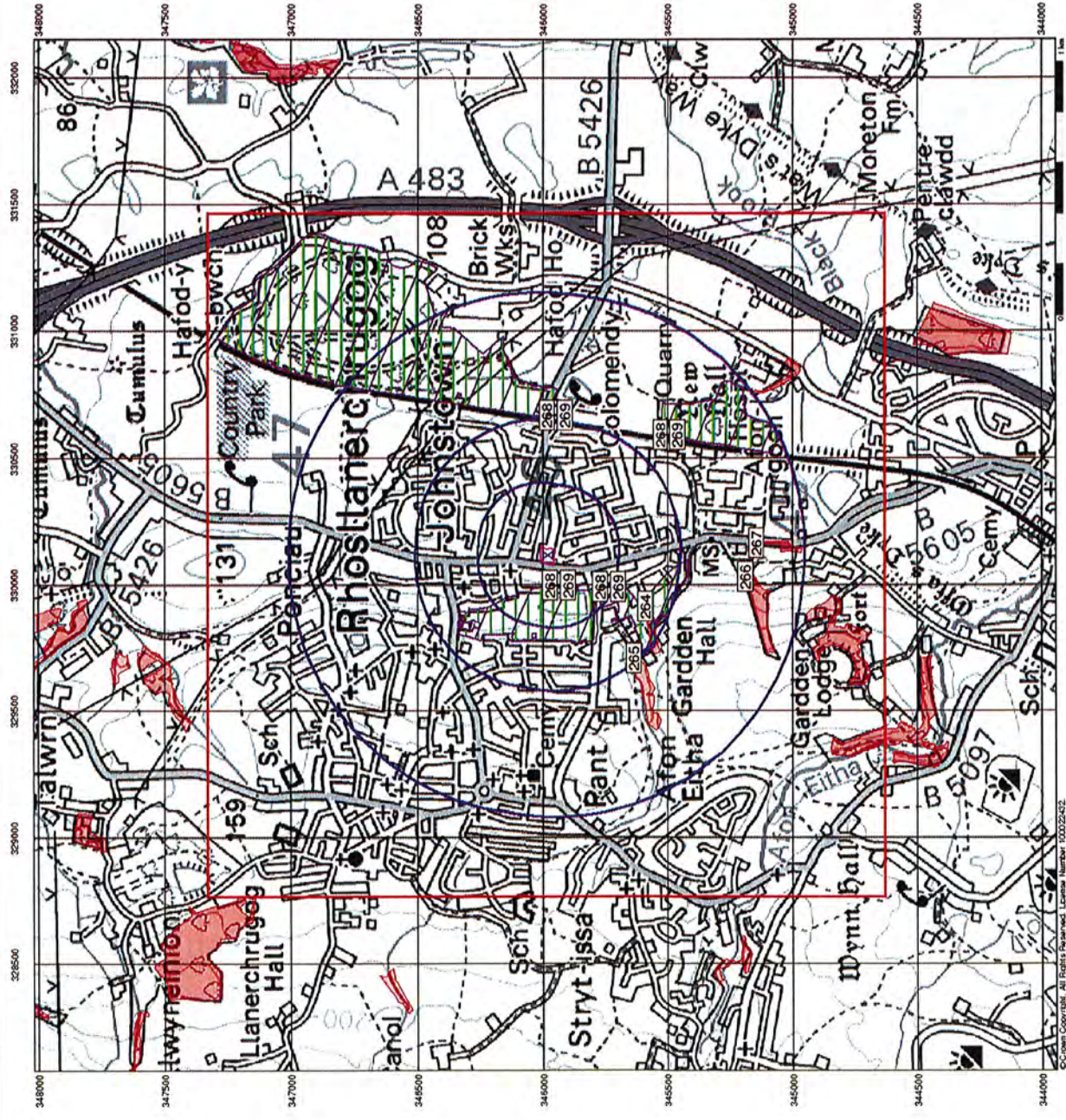


Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363/sdi
 National Grid Reference: 330720, 345980
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 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU



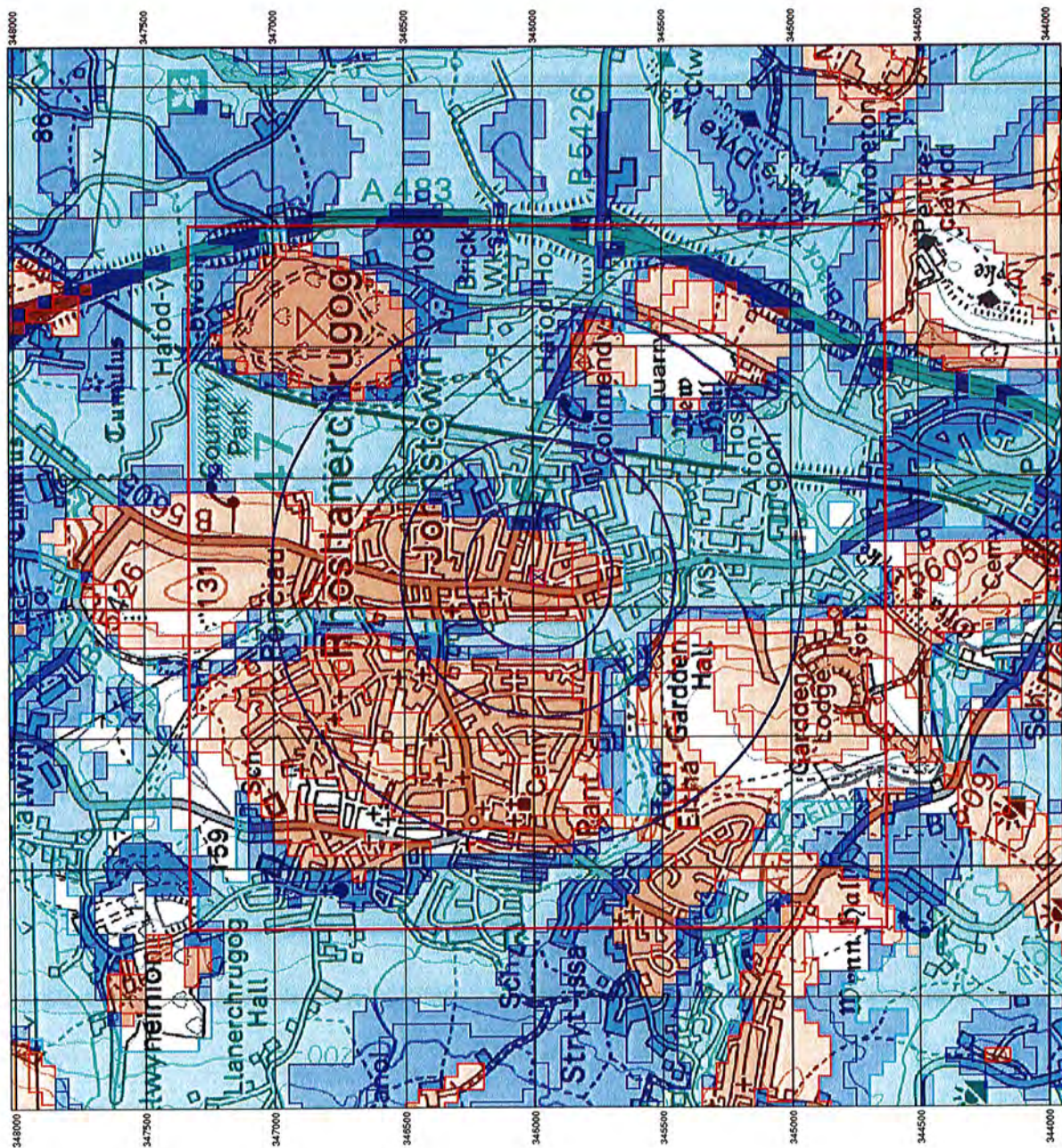
BGS Flood GFS Data

General

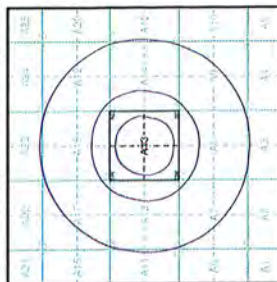
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Site

Agency and Hydrological (Flood)

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



Site Sensitivity Context Map - Slice A

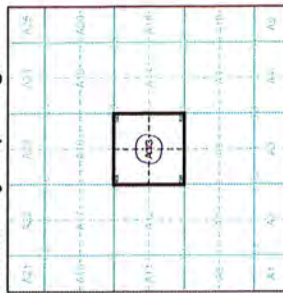


Order Details

Order Number: 242556643_1_1
 Customer Ref: 23633/sd
 National Grid Reference: 330120, 345980
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 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU



Order Details

Order Number: 242556643_1_1

Order Number: 242500043_1_1
Customer Ref: 2363/sdi

National Grid Reference: 330120, 345980

Slice:	A
Site Area (Ha):	0.34

Site Area (Ha): 0.34
Plot Buffer (m): 100

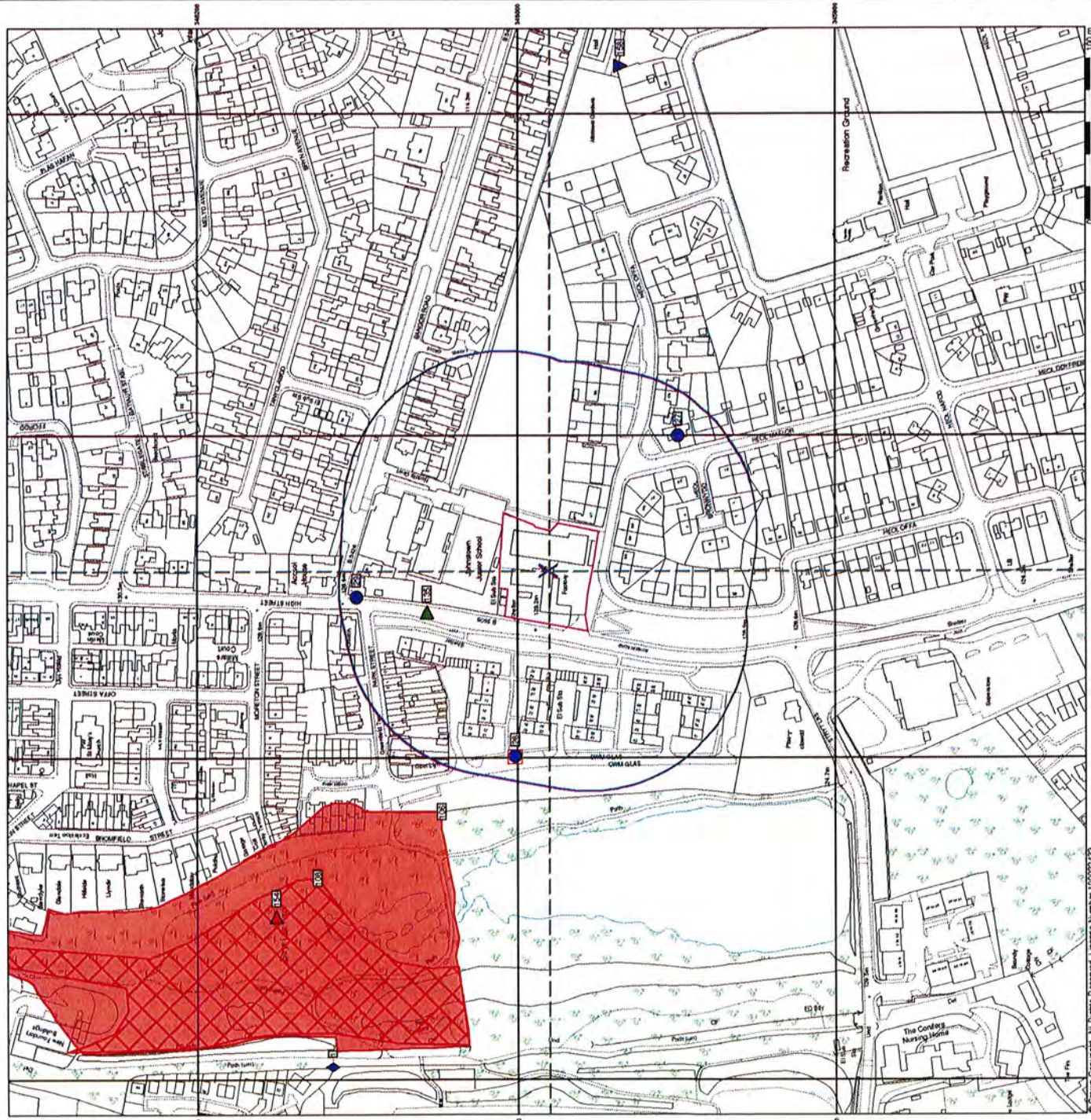
Site Details

Site Details
Johnstown Trade Cars, Johnstown Trade Cars, High Street,
Johnstown, Wrexham, LL14 6PU

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Search Buffer (m): 1000

Site Details
Johnstown Trade Cars, Johnstown Trade Cars, High Street,
Johnstown, Wrexham, LL14 6PU

General

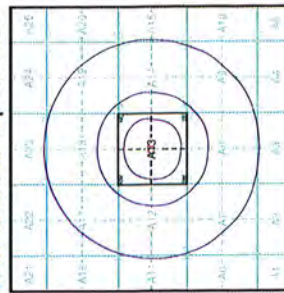
- | Specified Site | Specified Buffer(s) | Bearing Reference Point |
|----------------|---------------------|-------------------------|
|----------------|---------------------|-------------------------|

- ☐ **Q&A**
☐ **Map ID**

Industrial Land Use

- ★ **Corrosion Trade Directory Entry**
- ★ **Fuel Station Entry**
- ✓ **Gas Pipeline**
- ★ **Ports of Interest - Commercial Services**
- ★ **Ports of Interest - Education and Health**
- ★ **Ports of Interest - Manufacturing and Production**
- ★ **Ports of Interest - Public Infrastructure**
- ★ **Ports of Interest - Recreational and Environmental**
- ✓ **Underground Electrical Cables**

Industrial Land Use Map - Slice A



Order Details

Order Details

Order Number: 242556643_1_1
Customer Ref: 2363/Isdi
National Grid Reference: 330120, 345980
Slice: A
Site Area (Ha): 0.34
Search Buffer (m): 1000

Site Details

Site Details
Johnstown Trade Cars, Johnstown Trade Cars, High Street,
Johnstown, Wrexham, LL14 6PU

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General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A

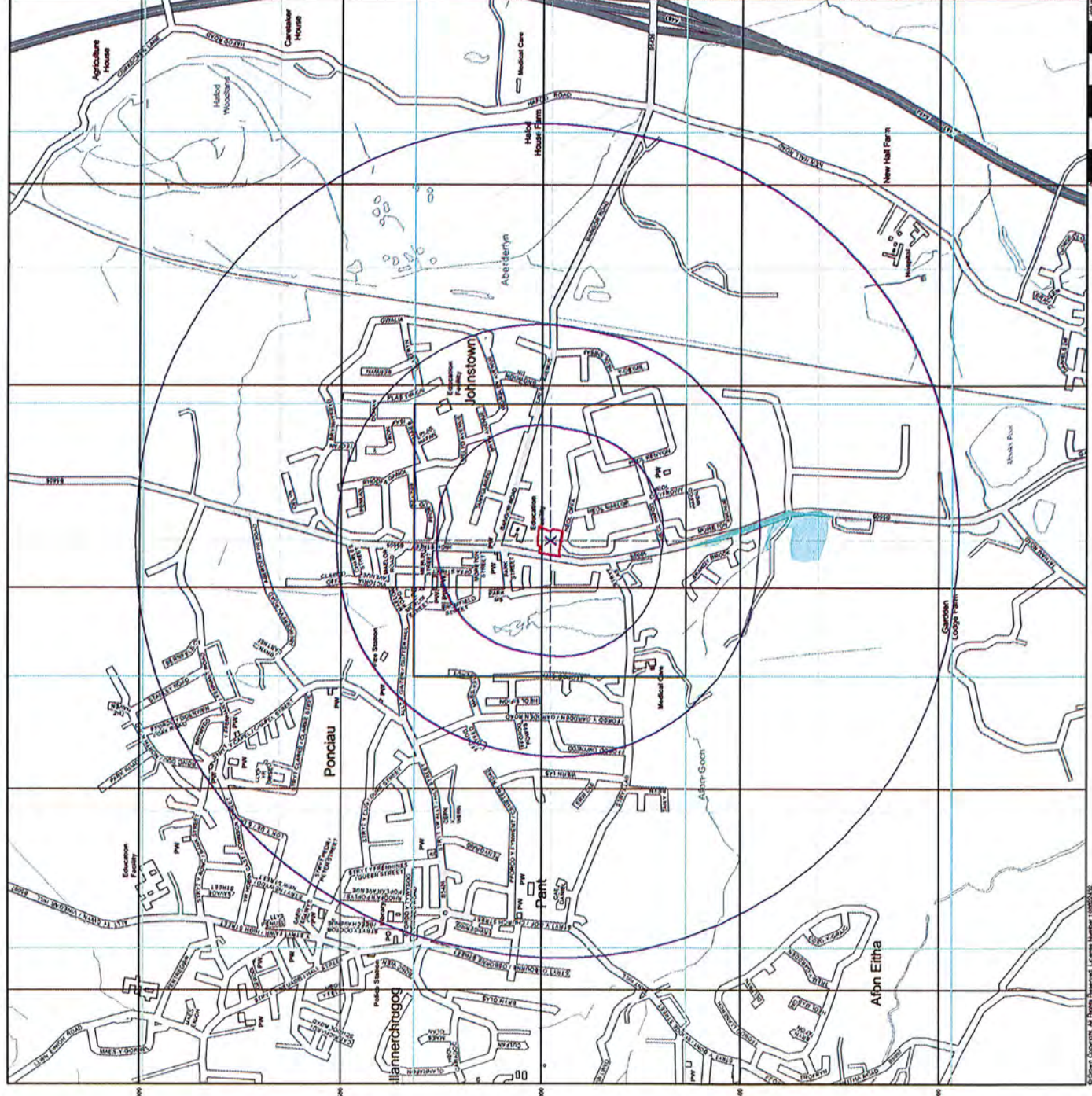


Order Details

Order Number: 242556643.1_1
 Customer Ref: 2363/SDI
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
 Johnstown, Wrexham, LL14 6PU



- General**
- Specified Site
 - Specified Buffer(s)
 - X Bearing Reference Point
 - Map ID
 - Symbols of Type at Location
- Agency and Hydrological (Boreholes)**
- BGS Borehole Depth 0 - 10m
 - BGS Borehole Depth 10 - 30m
 - BGS Borehole Depth 30m +
 - Confidential
 - Other

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

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

Borehole Map - Slice A

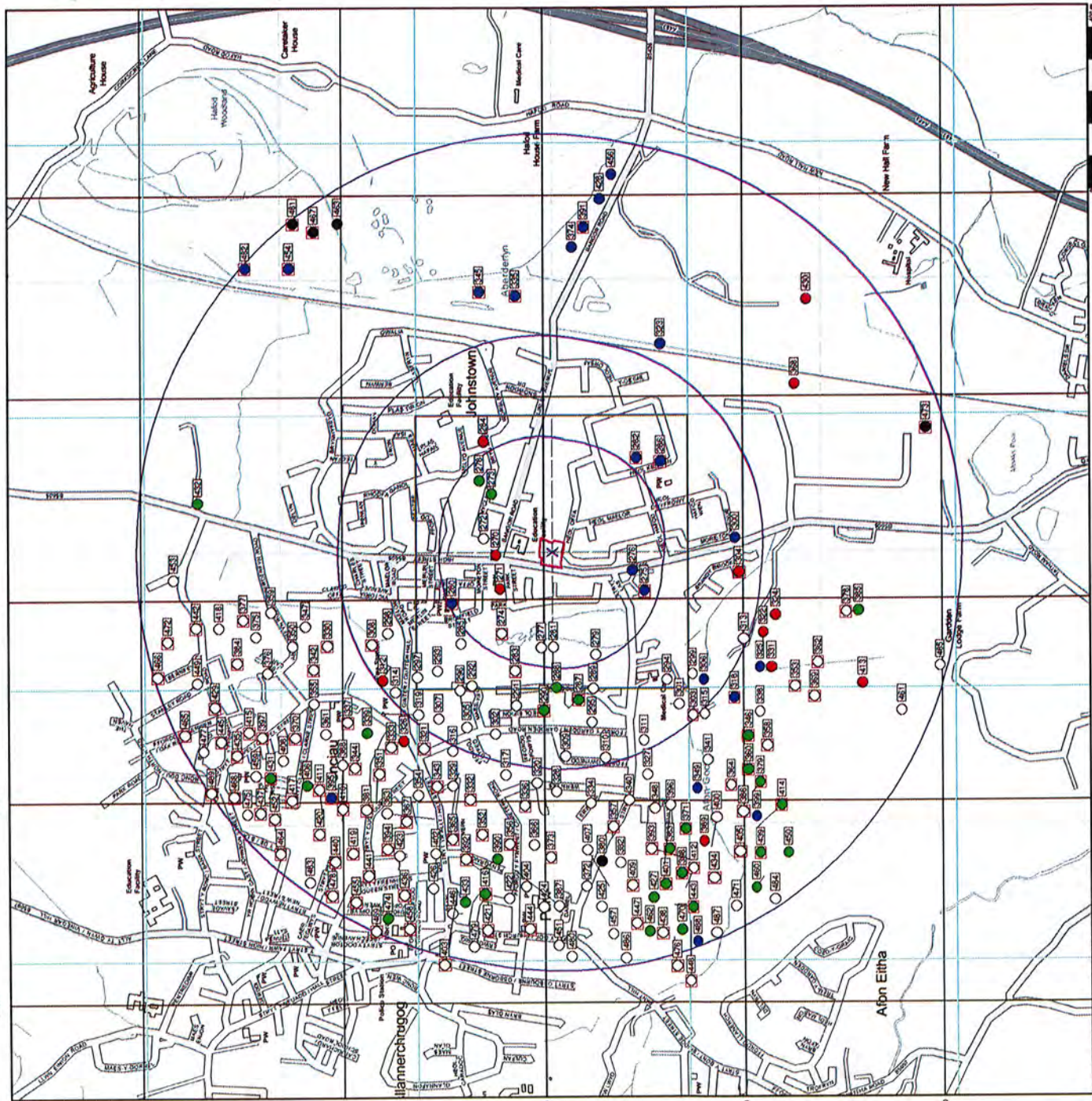


Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363/sdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstone Trade Cars, Johnstone Trade Cars, High Street,
 Johnstone, Wrexham, LL14 6PU



- General**
- Specified Site
 - Specified Buffer(s)
 - X Bearing Reference Point
- OS Water Network Data**
- Canal
 - Reservoir
 - Foreshore
 - Marsh
 - Tidal River
 - Inland River
 - Drain
 - Other
 - Lake
 - Transfer
 - Lock Or Flight Of Locks
 - Sea
- Contours (height in meters)**
- Standard Contour
 - Master Contour
 - Spot Height
 - Mean Low Water
 - Mean High Water

OS Water Network Map - Slice A



Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363/sdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

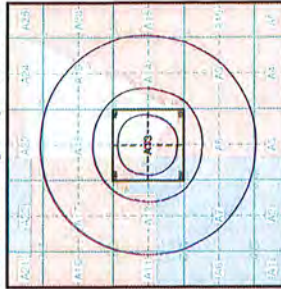
Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
 Johnstown, Wrexham, LL14 6PU

- General**
- Specified Site
 - Specified Buffer(s)
 - X Bearing Reference Point
- Risk of Flooding from Surface Water**
- High - 30 Year Return
 - Medium - 100 Year Return
 - Low - 1000 Year Return

- Suitability**
- See the suitability map below
- National to county
 - County to town
 - Town to street
 - Street to parcels of land
 - Property

EANRW Suitability Map - Slice A

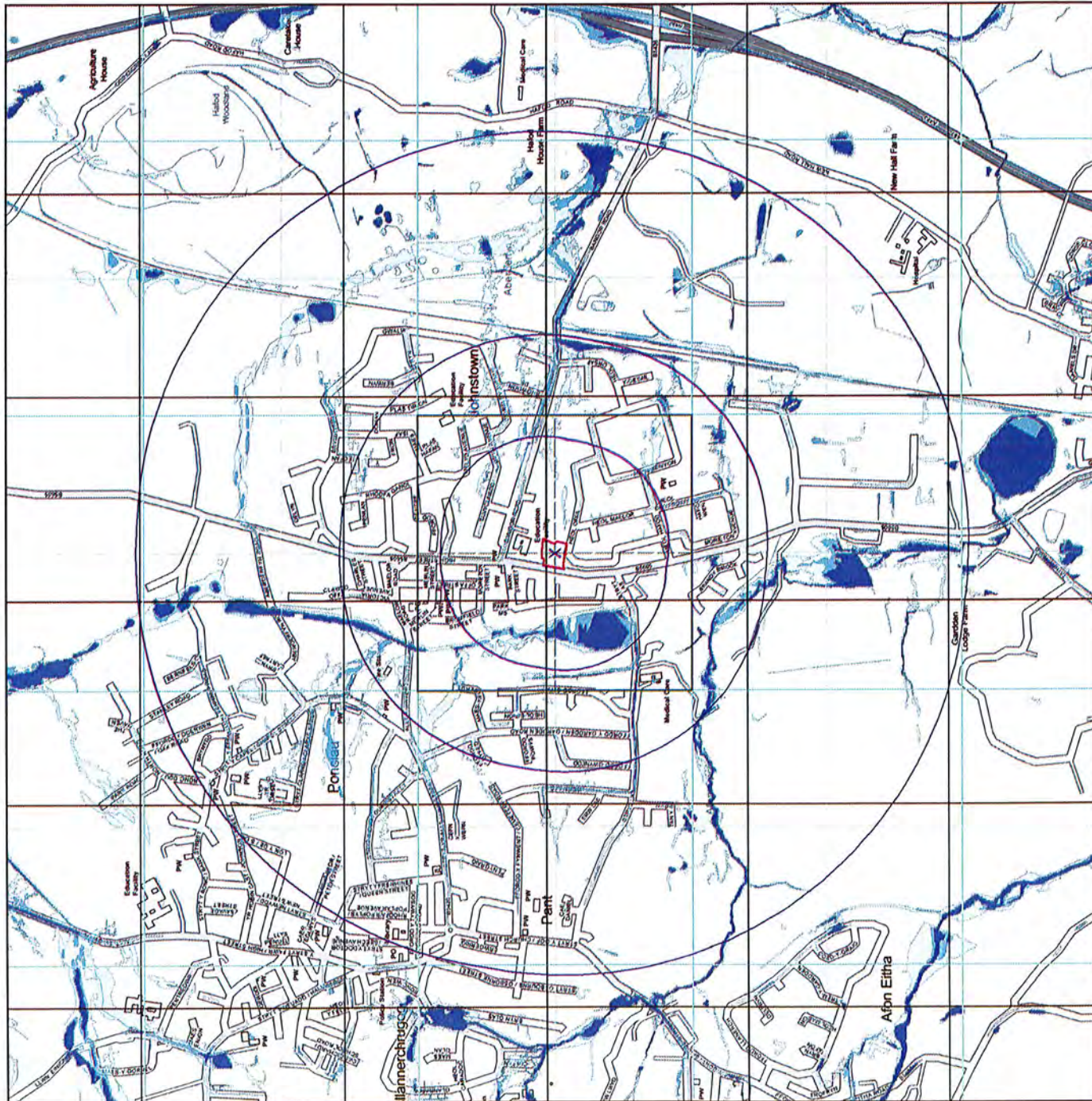


Order Details

Order Number: 242556643_1_1
 Customer Ref: 2363/ldi
 National Grid Reference: 330120, 345980
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 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
 Johnstown, Wrexham, LL14 6PU

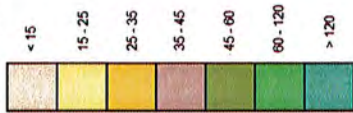


General

Standard Site ☐ Standard Buffer(s) ☐ (bearing Reference Point)

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice A

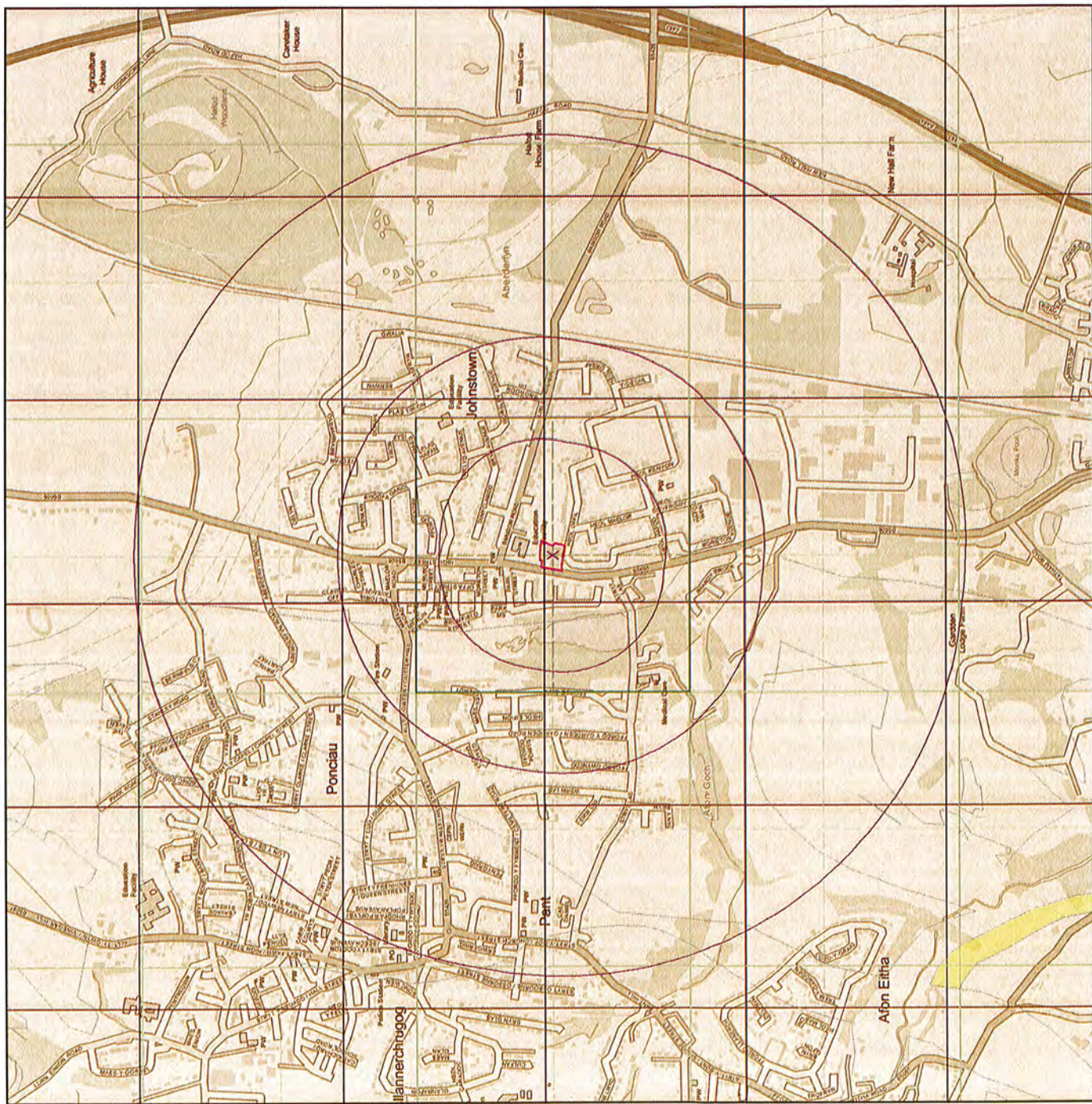


Order Details

Order Details: 242556643_1_1
 Customer Ref: 2363/sdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
 Johnstown, Wrexham, LL14 6PU



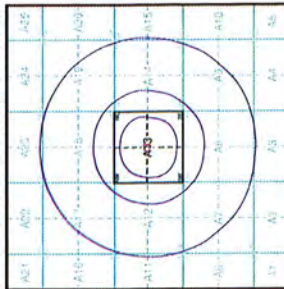
General
 Sample Site  Sampled (Number(s))  Bearing Reference Point 

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice A

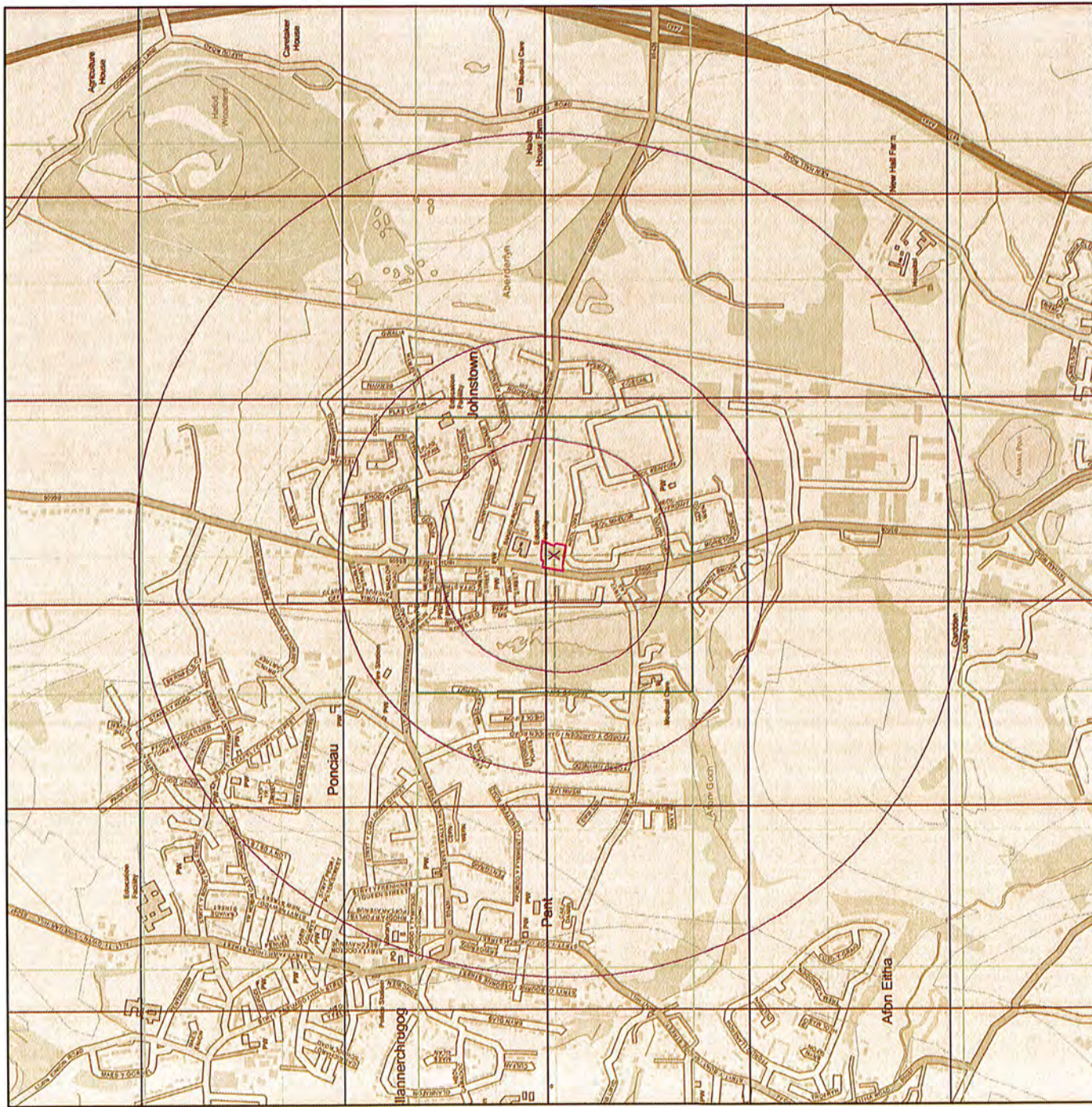


Order Details

Order Details: 242556643_1_1
 Customer Ref: 2363/sdf
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
 Johnstown, Wrexham, LL14 6PU



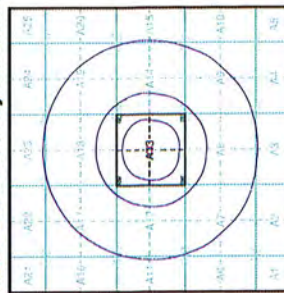
General
 ○ Sampled Site ○ Sampled Buffer(s) X Missing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details: 242556643_1_1

Customer Ref: 2363/sdi

National Grid Reference: 330120, 345980

Site: A

Site Area (Ha): 0.34

Search Buffer (m): 1000

Site Details

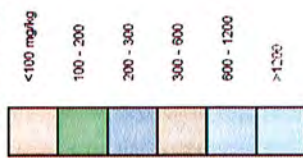
Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU

General

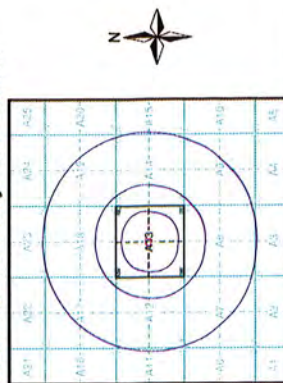
Sample Site: ☒ Specified Buffer(s): ☒ Existing Reference Point: ☒

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details: 242556643_1_1
Customer Ref: 2363/sdi
National Grid Reference: 330120, 345980
Slice: A
Site Area (Ha): 0.34
Search Buffer (m): 1000

Site Details

Johnstown Trade Cars, Johnstown Trade Cars, High Street,
Johnstown, Wrexham, LL14 6PU

 Specified Site

Specified Duration(s)

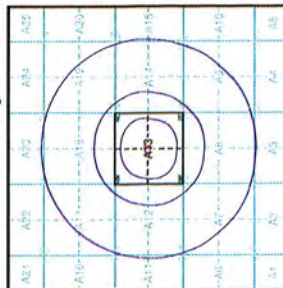
X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:
 Order Details: 242556643_1_1
 Customer Ref: 2363/sdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

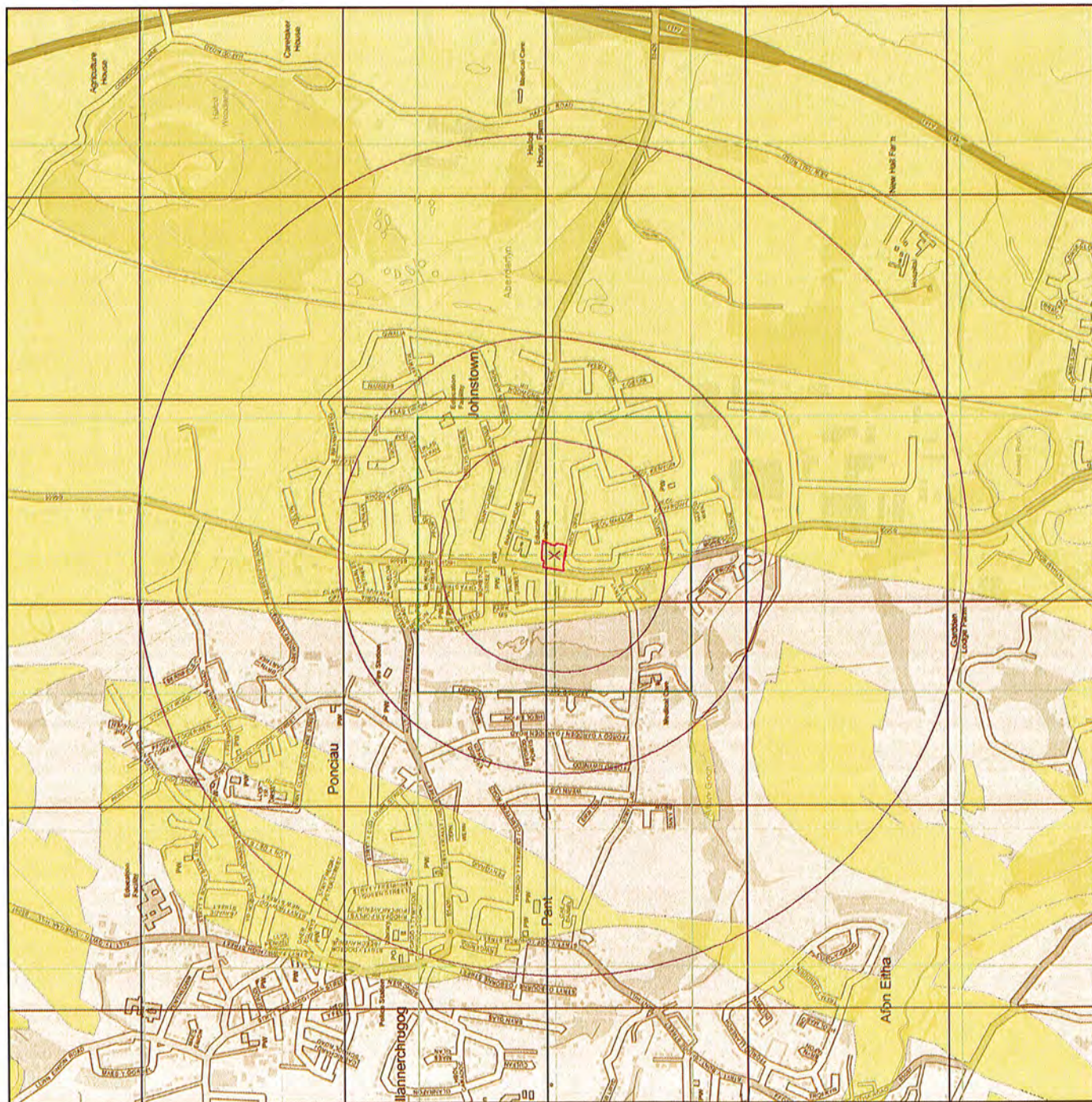
Site Details

Site Details
Johnstown Trade Cars, Johnstown Trade Cars, High Street,
Johnstown, Wrexham, LL14 6PU

Landmark
INFORMATION GROUP

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

A Landmark Information Group Service v50.0 13-May-2020 Page 5 of 5



Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamiction	Not Supplied - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	GFSDD	Glaciofluvial Sheet Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	RTDU	River Terrace Deposits (Undifferentiated)	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	HA	Halesowen Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	CF	Cefn Rock	Sandstone	Not Supplied - Westphalian
	PLMC	Pennine Lower Coal Measures Formation and Pennine Middle Coal Measures Formation (Undifferentiated)	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	PLMC	Pennine Lower Coal Measures Formation and Pennine Middle Coal Measures Formation (Undifferentiated)	Sandstone	Not Supplied - Westphalian
	ETM	Etruria Formation	Mudstone	Not Supplied - Westphalian
		Faults		
		Rock Segments		

Geology 1:50,000 Maps

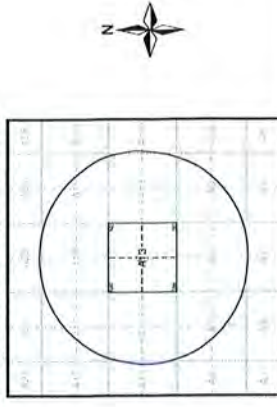
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	121
Map Name:	Wrexham
Map Date:	1993
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details:

Order Number: 242556643_1_1
Customer Reference: 23633rdi
National Grid Reference: 330120, 345980
Site: A
Site Area (Ha): 0.34
Search Buffer (m): 1000

Site Details:

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU

Artificial Ground and Landslip

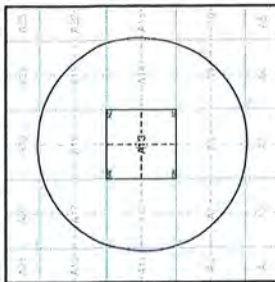
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- In-filled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes founded strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A

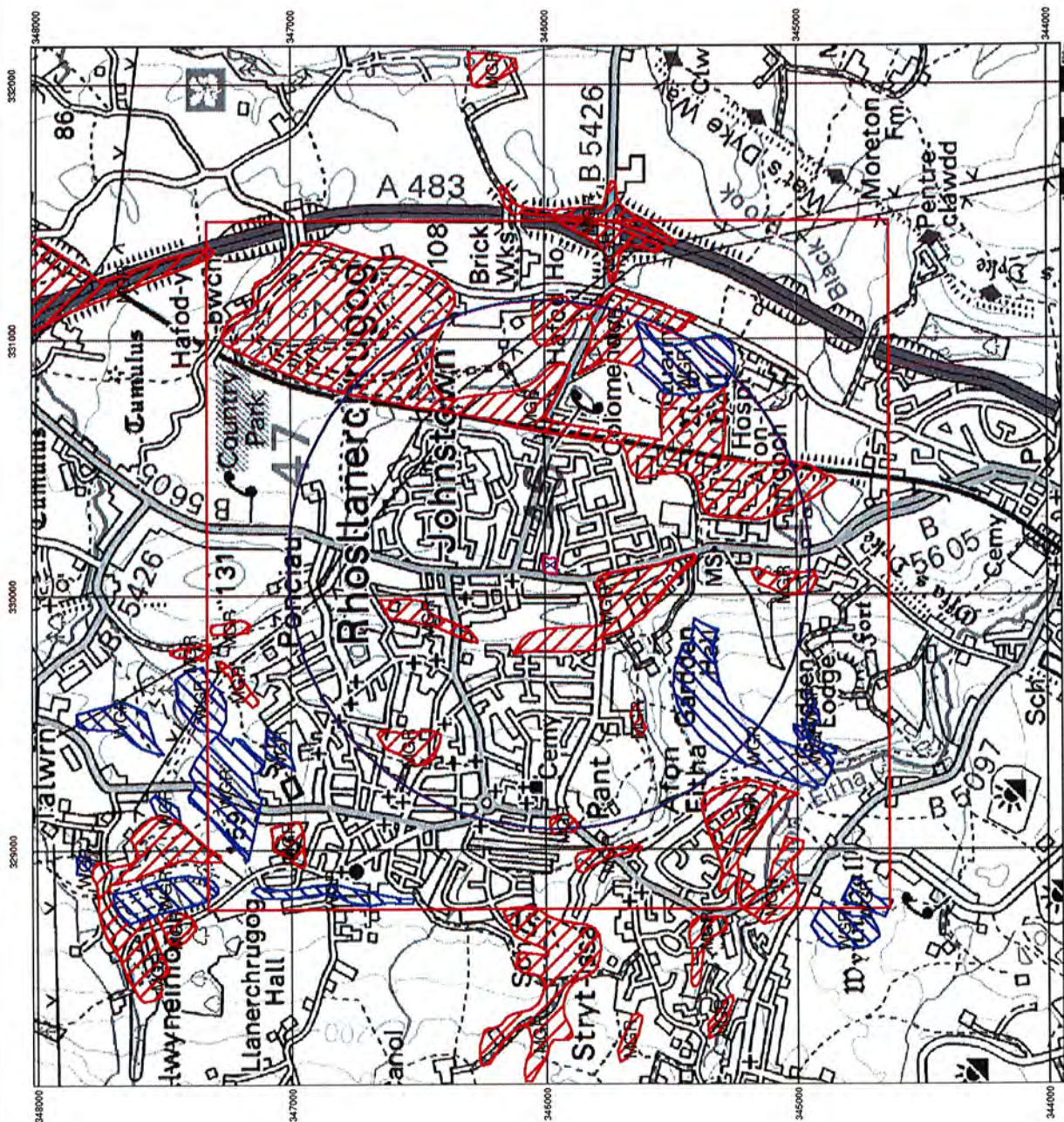


Order Details:

Order Number: 242556643_1_1
 Customer Reference: 23533rdi
 National Grid Reference: 330120, 345980
 Slice: A
 Site Area (Ha): 0.34
 Search Buffer (m): 1000

Site Details:

Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown, Wrexham, LL14 6PU



Bedrock and Faults

Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

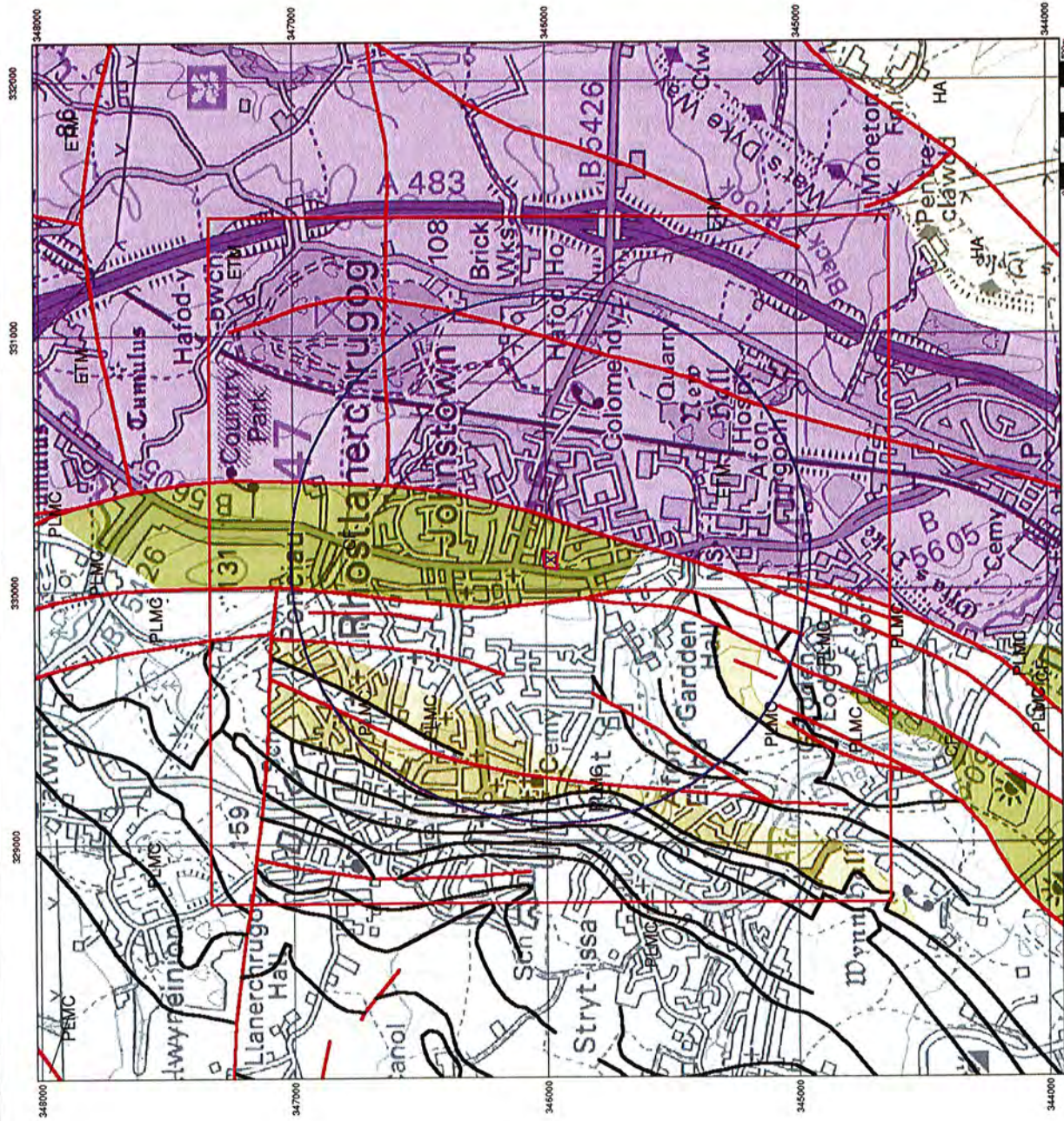
Bedrock and Faults Map - Slice A

**Order Details:**

Order Details:
Order Number: 242556643_1_1
Customer Reference: 2363/sdi
National Grid Reference: 330120, 345980
Slice: A
Site Area (Ha): 0.34
Search Buffer (m): 1000

Site Details:

Site Details.
Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown,
Wrexham, LL14 6PU



Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

Additional Information

More information on 150,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A

**Order Details:**

Order Details:

Order Number:	242556643_1_1
Customer Reference:	2363/sdl
National Grid Reference:	330120, 345980
Slice:	A
Site Area (Ha):	0.34
Search Buffer (m):	1000

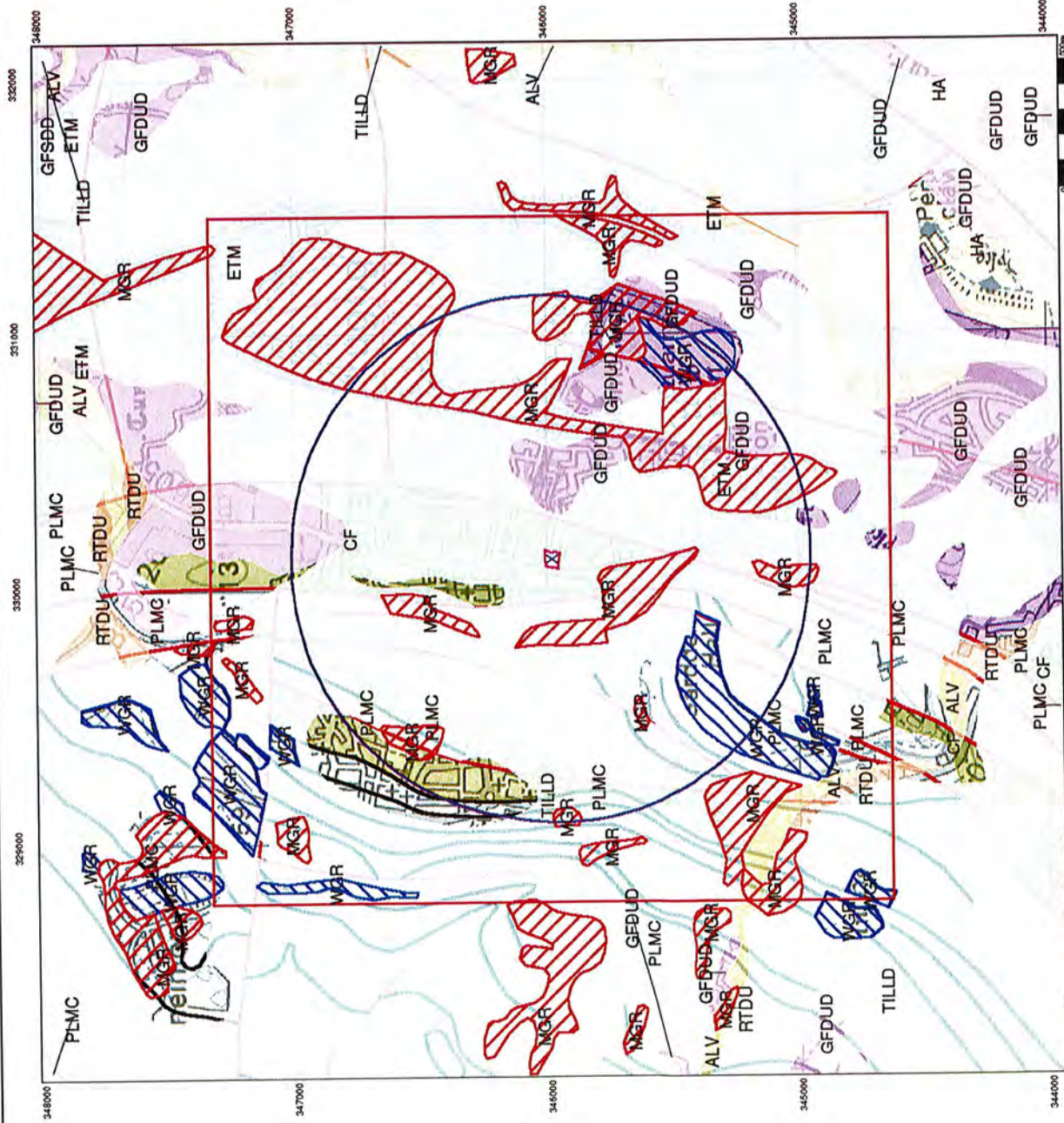
Site Details:

Site Details.
Johnstown Trade Cars, Johnstown Trade Cars, High Street, Johnstown,
Wrexham, LL14 6PU

Landmark
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Tel: 0844 844 9962
Fax: 0844 844 9951
Web: www.enrchecked.co.uk

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APPENDIX C

Coal Authority Mining Report



The Coal
Authority

Consultants Coal Mining Report

Land At Johnstown, Wrexham
Wrexham
LL14 2BA

Date of enquiry: 13 May 2020
Date enquiry received: 13 May 2020
Issue date: 13 May 2020

Our reference: 51002276193001
Your reference: 2363/sdi



Consultants

Coal Mining 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

GROUNDSOLVE LTD

Enquiry address

Land At Johnstown, Wrexham
Wrexham
LL14 2BA

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

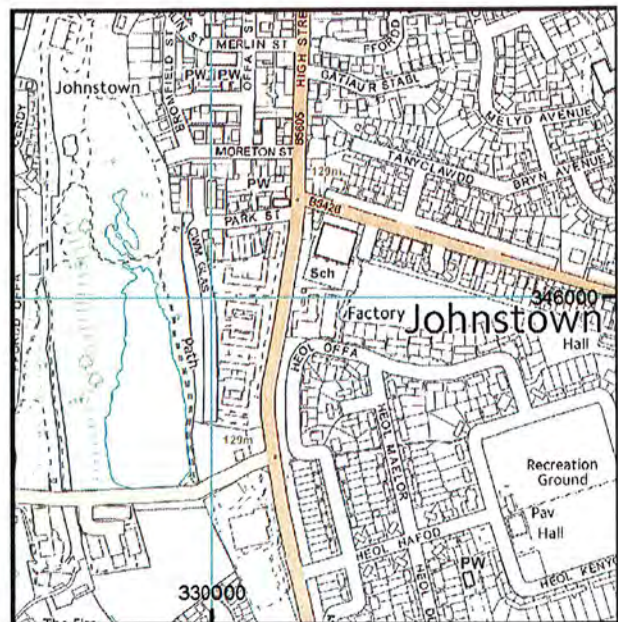
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Ordnance Survey Licence number: 100020315

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
BRANDIE	WALL AND BENCH	Coal	380Z	65	South	6.0	East	110	1872
unnamed	RUABON YARD (SOFT 5 QTRS)	Coal	7H2Z	120	Beneath Property	6.0	East	100	1872
unnamed	RUABON YARD (SOFT 5 QTRS)	Coal	382J	141	South	6.0	East	100	1872
BRANDIE	STONE	Coal	38V7	142	West	6.0	East	100	1872
unnamed	WALL AND BENCH	Coal	7BNV	155	West	6.0	East	110	1860
unnamed	WALL AND BENCH	Coal	7OLD	161	West	6.0	East	110	1860

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW1506	NW1508	NW1406
NW1505	NW1507	14881
PO0	NW1396	

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, 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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

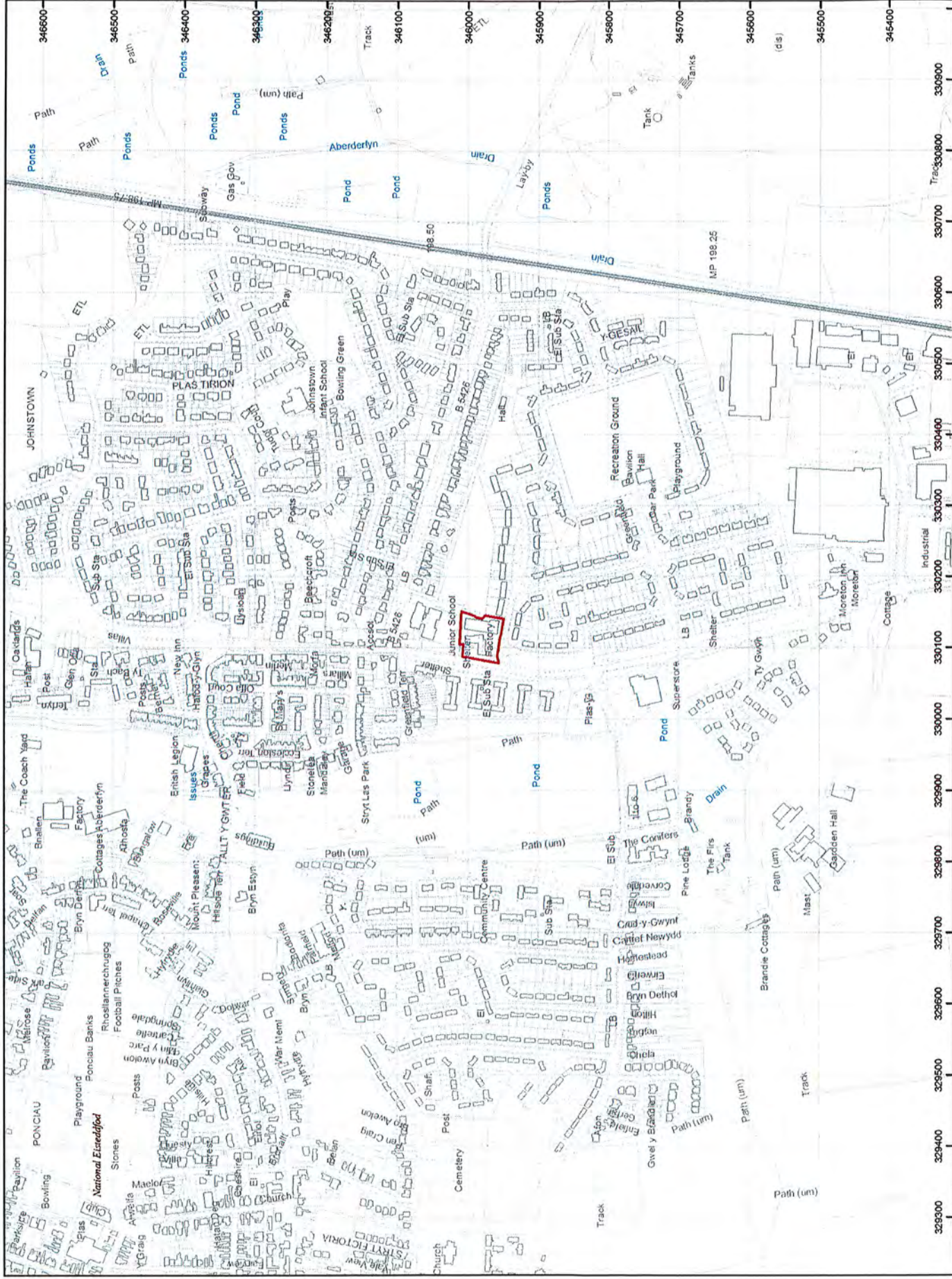
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VAT receipt

Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	13 May 2020
Issued to	GROUND SOLVE LTD UNIT 1 WELL HOUSE BARN CHESTER ROAD BRETTON FLINTSHIRE CH4 0DH
Property search for	LAND AT JOHNSTOWN, WREXHAM WREXHAM LL14 2BA
Reference number	51002276193001
Date of issue	13 May 2020
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68



The map highlights any specific surface or subsurface features within or near to the boundary of the site.



APPENDIX D

Previous Trial Pit Log

TRIAL PIT A

Depth (m)	Strata
0.00-0.09	Asphalt (MADE GROUND).
0.09-1.00	Dense black to orangish brown sandy angular to subangular fine to coarse GRAVEL of concrete brick clinker and ash. (MADE GROUND).
1.00-1.70	Firm light brown mottled grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone. (GLACIAL TILL)

Notes

1. Trial pit machine excavated to 1.00m then continued by auguring to 1.70m.
2. Minor seepage noted at 1.00m.
3. Sides of pit stable.
4. Samples taken at 0.20m for chemical testing
5. Samples taken at 1.20m for physical testing
6. Soakaway test carried out.

Trial Pit 1



Trial Pit 1 Spoil



Trial Pit Log

Project Name: Johnstown

Client: Gower Homes

Date: 29/04/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name: Phil HPH

Equipment: JCB 3CX

Location Number
TP01Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES					Medium dense blackish red gravelly SAND. Gravel is subangular to angular fine to coarse of brick. (MADE GROUND)	
					0.40			Medium dense brown gravelly slightly clayey SAND. Gravel is subangular to subrounded of mixed lithologies. (MADE GROUND)	
					0.80			Medium dense clayey SAND. (FLUVIOGLACIAL DEPOSITS)	
					1.00			Firm brown yellow very gravelly very sandy CLAY with low coble content. Gravel is subangular to subrounded fine to coarse of ironstone and sandstone with coal traces. Cobbles are subrounded of mudstone. (GLACIAL TILL)	1
		1.90	ES					Becoming soft and wet with hydrocarbon odour @1.90m.	2
					2.30			End of Borehole at 2.300m	
									3
									4
									5
Dimensions		Trench Support and Comment				Pumping Data			
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks		
2.00	0.60	Stable							
Remarks								AGS	
Small infiltration of groundwater encountered at 1.90m.									

TP01- Pit Walls



TP01- Spoil



Trial Pit Log

Project Name: Johnstown			Client: Gower Homes			Date: 29/04/2021			
Location: Johnstown, Wrexham			Contractor: Harvey Plant Hire						
Project No. : 2363			Crew Name:			Equipment: JCB 3CX			
Location Number TP02		Location Type TP		Level		Logged By ES		Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES				Loose to medium dense very gravelly SAND with medium cobble content. Gravel is subangular to angular fine to coarse of brick. Cobbles are angular of brick. (MADE GROUND)	1	
					0.50			Medium dense brown gravelly clayey SAND. Gravel is subrounded to rounded of mudstone (MADE GROUND)	
					0.70			Firm brownish yellow very sandy gravelly clay. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (MADE GROUND)	
					1.20			End of Borehole at 1.200m	
								2	
								3	
								4	
								5	

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit Stable					

Remarks No groundwater encountered.							
--	--	--	--	--	--	--	---

TP02-Pit Walls



TP02- Spoil



Trial Pit Log

Project Name: Johnstown

Client: Gower Homes

Date: 29/04/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name:

Equipment: JCB 3CX

Location Number
TP03Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES					Medium dense blackish red very gravelly SAND. Gravel is subangular to angular fine to coarse of brick and clinker. (MADE GROUND)	
		0.85	ES		0.80 0.90			Medium dense black sandy subangular to angular fine to coarse GRAVEL of brick and clinker. (MADE GROUND) Firm brownish yellow very sandy CLAY. Gravel is subangular to angular fine to coarse of mixed lithologies. (GLACIAL TILL)	1
					1.50			End of Borehole at 1.500m	2
									3
									4
									5

Dimensions

Trench Support and Comment

Pumping Data

Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit Stable					

Remarks

No groundwater encountered.



TP03- Pit Walls



TP03- Spoil



Trial Pit Log

Project Name: Johnstown

Client: Gower Homes

Date: 29/04/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name:

Equipment: JCB 3CX

Location Number
TP04Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Grey concrete slab. (MADE GROUND)	1
					0.30			Medium dense brown gravelly SAND. Gravel is subangular to angular fine to coarse of brick. (MADE GROUND)	
		0.50	ES		0.40			Medium dense black subangular to angular fine to coarse GRAVEL of asphalt ash and clinker. (MADE GROUND)	
					0.90			Medium dense brown very sandy subangular to angular fine to coarse GRAVEL of mixed lithologies with high cobble content. Cobbles are angular of brick. (MADE GROUND)	
		1.20	D		1.50			Firm brownish yellow very gravelly very sandy CLAY. gravel is subangular to subrounded fine to coarse of mudstone and sandstone. (GLACIAL TILL)	
								End of Borehole at 1.500m	2
									3
									4
									5

Dimensions

Trench Support and Comment

Pumping Data

Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit Stable					

Remarks

No groundwater encountered.



TP04-Pit Walls



TP04- Spoil



Trial Pit Log

Project Name: Johnstown

Client: Gower Homes

Date: 29/04/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name:

Equipment: JCB 3CX

Location Number
TP05Location Type
TP

Level

Logged By

Scale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES					Very dense greyish block subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND)	
					0.30				
		1.00	D					Firm brown very gravelly very sandy CLAY with high cobble content. Gravel is subangular to angular fine to coarse of mudstone with coal traces. Cobs are subrounded of sandstone. (GLACIAL TILL)	1
		1.20		HVP=90.0	1.20				
		2.00	D					Stiff to very stiff brown mottled grey very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	2
					2.30			End of Borehole at 2.300m	
									3
									4
									5

Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
2.20	0.60							

Remarks

Slight groundwater infiltration at 1.50m.



TP05- Pit Walls



TP05- Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 29/04/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP06	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.30			Medium dense grey sandy subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND)	1
					0.40			Dense black subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND)	
								Firm very sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone and coal. (GLACIAL TILL)	
		1.00	D		1.50			Loose slightly gravelly SAND. Gravel is subrounded fine to coarse of mudstone and coal. (FLUVIOGLACIAL DEPOSITS)	
					1.90			Running sand from 1.50m.	
								End of Borehole at 1.900m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.50	0.60	Pit unstable due to running sands.					

Remarks

Fast infiltration of groundwater at 1.50m.



TP06- Pit Walls



TP06- Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 29/04/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP07	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10			Dense grey subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND)	1
		0.30			0.50			Medium dense black very gravelly SAND. Gravel is subangular to angular fine to coarse of brick. (MADE GROUND)	
		1.10	D		1.00			Firm brown sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone. (GLACIAL TILL)	
		End of Borehole at 1.200m							
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	1.60	Pit Stable					

Remarks

No groundwater encountered.



TP07- Pit walls

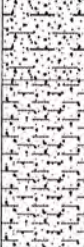


TP07- Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 29/04/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP08	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES	HVP=100.0	0.10			Very dense black subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND) Dense grey subangular to angular fine to coarse GRAVEL of asphalt. (MADE GROUND)	1
					0.60			Firm light brown mottled grey sandy slightly gravelly CLAY. Gravel is subangular to angular fine to coarse of mudstone and sandstone with coal traces. (GLACIAL TILL)	
		1.00 1.00	D		1.50			Loose slightly gravelly very clayey SAND. Gravel is subrounded to rounded fine to coarse of mudstone and coal. (FLUVIOGLACIAL DEPOSITS)	
					1.80			Firm light brown mottled grey very gravelly very sandy CLAY with high cobble content. Gravel is subrounded to rounded fine to coarse of mudstone. cobbles are subrounded of mudstone. (GLACIAL TILL)	2
					2.40			End of Borehole at 2.400m	
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.10	0.60	Pit stable					

Remarks

Slight groundwater infiltration at 1.50m.



TP08- Pit Walls



TP08- Spoil



APPENDIX E

Permeability Testing Results

GroundSolve Ltd
Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

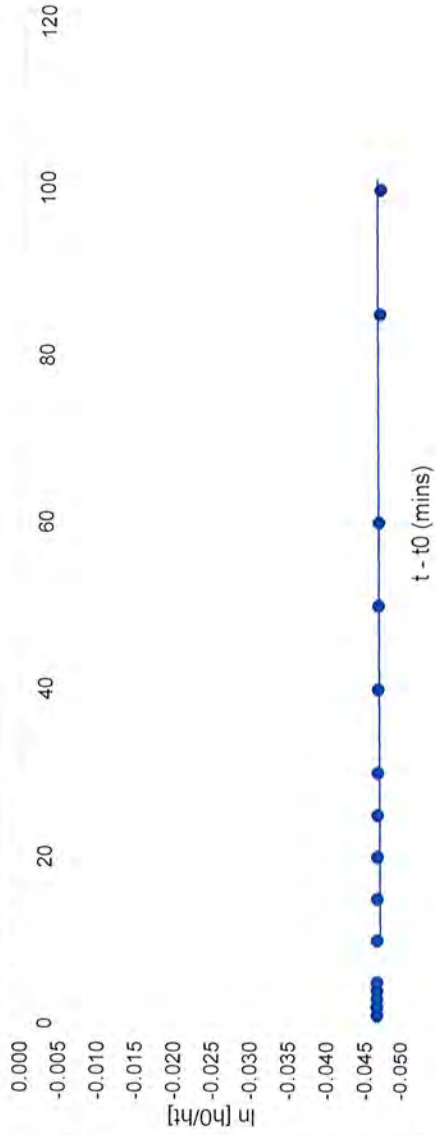
FALLING HEAD TEST PERMEABILITY CALCULATION
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2363
Project Name	Johnstown
Borehole	BH01
Date	26/06/2020

BH Depth (m)	0.90
Casing Depth (m)	0.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	0.90
Shape Factor	2.1595

Time (mins)	Depth to Water	ln (h ₀ /h _t)
0	1.11	0.000
1	1.12	-0.047
2	1.12	-0.047
3	1.12	-0.047
4	1.12	-0.047
5	1.12	-0.047
10	1.12	-0.047
15	1.12	-0.047
20	1.12	-0.047
25	1.12	-0.047
30	1.12	-0.047
40	1.12	-0.047
50	1.12	-0.047
60	1.12	-0.047
85	1.12	-0.047
100	1.12	-0.047



α (gradient)	0.00000
Area of BH (m ²)	0.05552

Infiltration Rate, k	0.000E+00 m/s
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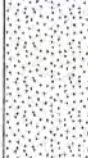
Notes	Failed test
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APPENDIX F

Recent Trial Pit and Borehole Logs

Percussion Drilling Log

Project Name: Johnstown		Client: Gower Homes		Date: 03/11/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name: Cheshire Dilling		Drilling Equipment: Dando 2000	
Borehole Number BH01	Hole Type CP	Level	Logged By AB	Scale 1:50	Page Number Sheet 1 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.70			Grey angular fine to coarse GRAVEL (Hardcore) (MADE GROUND)	
		1.00	SPT	N=8 (2,2/2,2,2,2)	1.10			Black brown sandy CLAY. (MADE GROUND)	1
		1.20	D						
		2.00	D					Loose brown fine to coarse SAND. (FLUVIOGLACIAL DEPOSITS)	2
		2.00	SPT	N=6 (1,2/1,1,2,2)	2.30				
		3.00	D					Soft quickly becoming stiff brown mottled green slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse with some cobbles. (FLUVIOGLACIAL DEPOSITS)	3
		3.00	SPT	N=36 (3,5/7,9,10,10)					
		4.00	D						4
		4.00	SPT	N=17 (4,3/3,3,5,6)					
		5.00	D		5.00			Grey SAND and GRAVELS (FLUVIOGLACIAL DEPOSITS)	5
		5.00	SPT	N=29 (5,7/9,10,6,4)	5.20			Stiff grey slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse with some cobbles. (GLACIAL TILL)	
		6.00	D						6
		6.00	SPT	N=17 (5,4/3,5,4,5)					
		7.00	D						7
		7.00	SPT	N=33 (6,10/3,10,10,10)					
		8.00	D						8
		8.00	SPT	N=40 (5,8/10,12,9,9)					
		9.00	D						9
		9.00	SPT	N=31 (5,6/7,7,8,9)					
		10.00	D						10

Remarks

Hole terminated due to proving bedrock.
Groundwater encountered at 5.1m and 6.0m, rising after 20minutes measured at 4.1m and 4.5m.



Percussion Drilling Log

Project Name: Johnstown

Client: Gower Homes

Date: 03/11/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name: Cheshire Dilling

Drilling Equipment: Dando 2000

Borehole Number
BH01Hole Type
CP

Level

Logged By
ABScale
1:50Page Number
Sheet 2 of 2

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.00	SPT	N=24 (4,3/5,6,6,7)	13.70 14.00			Stiff grey slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse with some cobbles. (GLACIAL TILL)	11
		11.00 11.00	D SPT	N=44 (5,3/8,8,11,17)					12
		12.00 12.00	D SPT	N=39 (5,7/9,9,10,11)					13
		13.00 13.00	D SPT	N=34 (10,9/8,8,9,9)					14
		14.00 14.00	D SPT	50 (17,8/50,...)				Stiff grey purpley slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of mudstone and sandstone. (WEATHERED BEDROCK) End of Borehole at 14.000m	15
									16
									17
									18
									19
									20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
1.00	150	1.50	150								
2.00	150	3.00	150								
5.00	150	4.50	150								
8.00	150	6.00	150								
11.00	150	7.50	150								

Remarks

Hole terminated due to proving bedrock.
Groundwater encountered at 5.1m and 6.0m, rising after 20minutes measured at 4.1m and 4.5m.



GroundSolve Ltd		Trial Pit Log									
Project Name: Johnstown				Client: Gower Homes				Date: 19/10/2021			
Location: Johnstown, Wrexham				Contractor: Harvey Plant Hire							
Project No. : 2363				Crew Name:				Equipment: JCB 3CX			
Location Number TP101		Location Type TP		Level		Logged By ES		Scale 1:25		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.40	ES		0.40			Loose black sandy subangular to angular fine to coarse GRAVEL of brick and concrete with occasional metal and high cobble content. Cobbles are angular of brick. (MADE GROUND)	1		
								Loose dark brown gravelly SAND. Gravel is subangular to angular fine to coarse of brick. (MADE GROUND)			
		0.90	ES		0.85			Firm brown very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)			
					1.40			End of Borehole at 1.400m			
									2		
									3		
									4		
									5		
Dimensions		Trench Support and Comment								Pumping Data	
Pit Length 1.50	Pit Width 0.60	Pit Stability Pit stable.	Shoring Used	Remarks				Date	Rate	Remarks	
Remarks No groundwater encountered.											



TP101- Pit walls



TP101 Spoil



Trial Pit Log

Project Name: Johnstown

Client: Gower Homes

Date: 19/10/2021

Location: Johnstown, Wrexham

Contractor: Harvey Plant Hire

Project No. : 2363

Crew Name:

Equipment: JCB 3CX

Location Number
TP102Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20			Loose brown clayey gravelly SAND. Gravel is subangular to angular fine to coarse of concrete and brick. q (MADE GROUND)	1
								End of Borehole at 2.000m	2
									3
									4
									5

Dimensions

Trench Support and Comment

Pumping Data

Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit unstable in running sands.					

Remarks

Groundwater infiltration @1.10- Running sands. Collapse of pit.



TP102 Pit Walls



TP102 Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 19/10/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP103	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30			Loose to medium dense light brown very sandy subangular to angular fine to coarse GRAVEL of masonry brick. (MADE GROUND)	
					0.90			Soft to firm brown very sandy CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	
					1.70			Loose to medium dense brown slightly gravelly clayey SAND. Gravel is subrounded to rounded fine to coarse of sandstone with occasional coal traces. (GLACIAL TILL)	1
								End of Borehole at 1.700m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit stable					

Remarks

No groundwater encountered.



TP103 Pit Walls



TP103 Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 19/10/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP104	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.40			Loose grey sandy subangular to angular fine to coarse GRAVEL of brick and concrete. (MADE GROUND)	1
		0.50	ES		0.60			Soft dark brown sandy slightly gravelly CLAY with rootlets. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (MADE GROUND)	
								Soft to firm very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone with occasional coal traces. (GLACIAL TILL)	
					1.30			End of Borehole at 1.300m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	Pit stable.					

Remarks

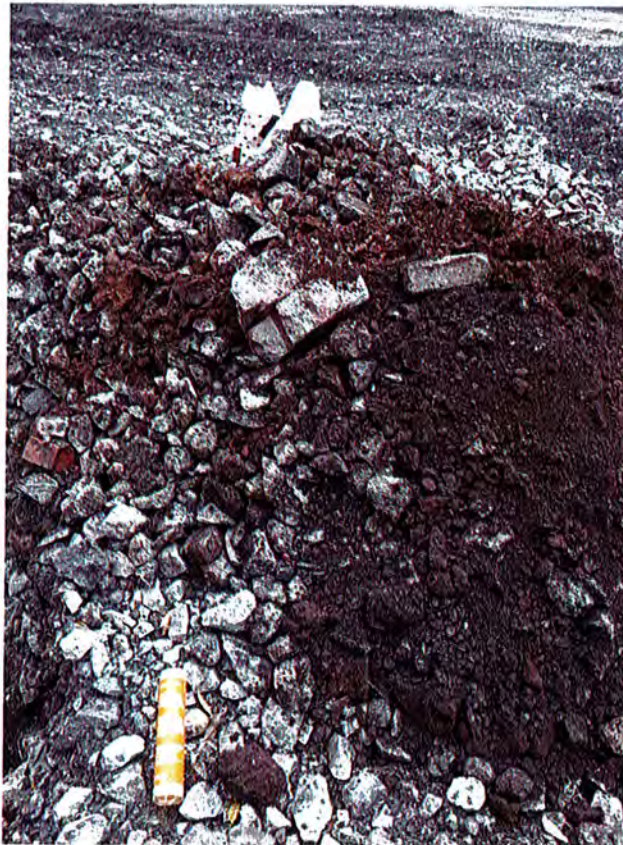
No groundwater encountered.



TP104 Pit Walls



TP104 Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 03/11/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP105	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30			Loose grey very sandy subangular to angular fine to coarse GRAVEL of brick and concrete. (MADE GROUND)	1
		0.30	ES					Soft brown gravelly CLAY with high cobble content. Gravel is subrounded to rounded fine to coarse of sandstone and brick. Cobbles are angular of brick. (MADE GROUND)	
					1.00			Firm brown mottled blue slightly sandy CLAY. Gravel is subrounded to rounded fine to coarse of sandstone with occasional coal. (GLACIAL TILL)	
					1.70			End of Borehole at 1.700m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	Pit Stable.					

Remarks

Slight groundwater infiltration @0.30m.



TP105 Pit Walls



TP105 Spoil



Trial Pit Log

Project Name: Johnstown		Client: Gower Homes		Date: 19/10/2021	
Location: Johnstown, Wrexham		Contractor: Harvey Plant Hire			
Project No. : 2363		Crew Name:		Equipment: JCB 3CX	
Location Number TP106	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.25			Loose brown very sandy subangular to angular fine to coarse GRAVEL of brick concrete and occasional metal. (MADE GROUND)	1
								Soft light brown very sandy very gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone and brick. (MADE GROUND)	
					1.00			Firm brown mottled blue sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	
					1.50			End of Borehole at 1.500m	5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.80	0.60	Pit stable.					

Remarks

Slight groundwater infiltration @ 1.0m.



TP106 Pit Walls



TP106 Spoil



HP1



APPENDIX G

Physical Testing Results

Laboratory Test Certificate

Form REP008 Rev 3

Issued To	Elizabeth Smith	Date of issue	17/07/2020
	Groundsolve Ltd	Issue No.	1
	Unit 1 Charter Court, Well House Barns	Client Ref. No.	2363/JTN/ES
	Chester Road, Bretton	Samples / Material Source	
	Flintshire, CH4 0DH	Samples Recv'd	07/07/2020
Testing Start Date	07/07/2020	Sample State	As received
Testing Complete	17/07/2020	Sampled by	Groundsolve Ltd
Comments			
Project No	PC207911		
Project Name	2363 - JOHNSTOWN		
Summary of Tests			
Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	1	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit	1	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
Signed for and on behalf of Geotechnics Limited

Schiano

Stephane Schiano (Laboratory Testing Manager)

GEOTECHNICS
geotechnical and geoenvironmental specialists

203 Torrington Avenue, Tile Hill,
Coventry, CV4 9UT

Project No: PC207911

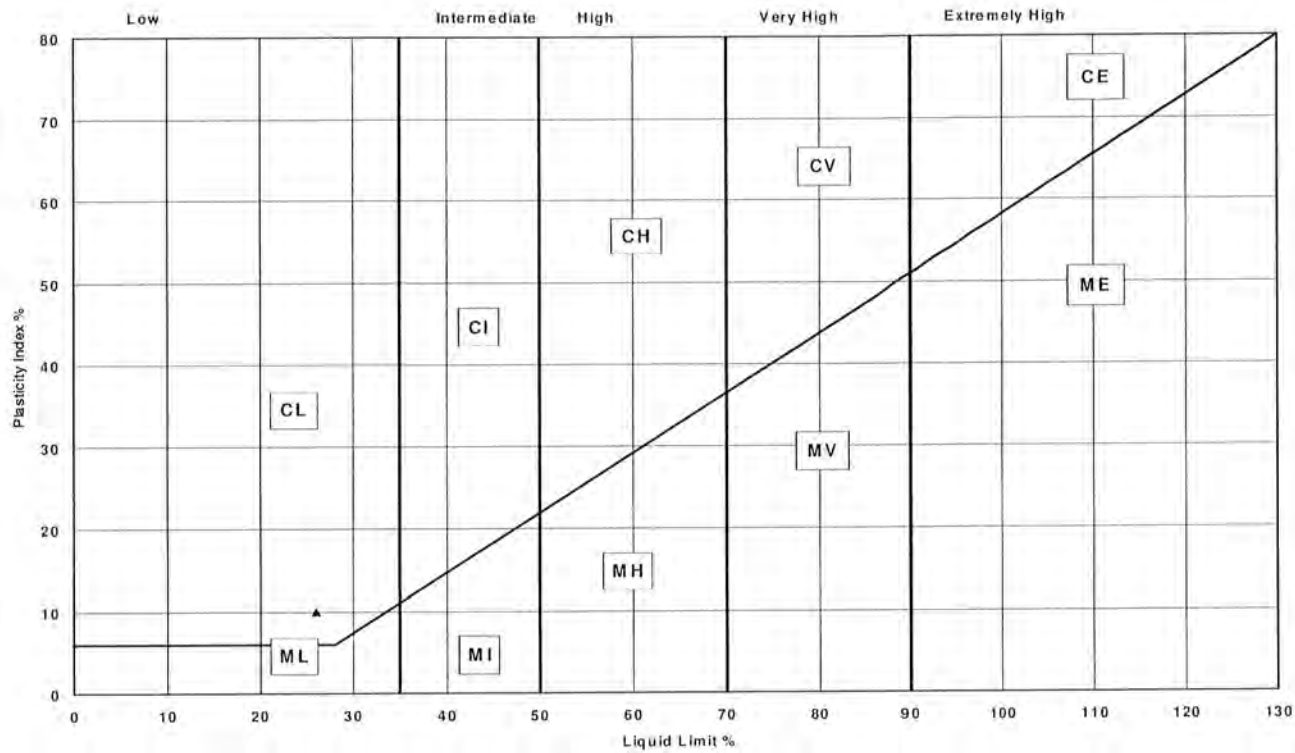
GEOTECHNICS
geotechnical and geoenvironmental specialists

LABORATORY RESULTS - Classification Chart

Project: 236 - JOHNSTOWN

Project No: PC207911

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT
for all items tested



Soil Type	Plasticity Characteristics
C Clay	L Low
	I Intermediate
M Silt	H High
	V Very High
	E Extremely High

Table of Soil Types and Plasticity Characteristics from BS 5930 : 1999

Remarks

17.07/2020

Project No: PC207911

GEOTECHNICS
geotechnical and geoenvironmental specialists

United Kingdom Accreditation Service

ACCREDITATION CERTIFICATE



TESTING LABORATORY
No. 1365

Geotechnics Limited

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2017 - General Requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from the UKAS website www.ukas.com.

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKAS website indicates that the accreditation is no longer in force.

Section Head, United Kingdom Accreditation Service

Initial Accreditation date
01 September 1993

This certificate issued on
07 August 2019

UKAS is appointed as the sole national accreditation body for the UK by The Accreditation Regulations 2009 (SI No 3155/2009) and operates under a Memorandum of Understanding (MoU) with the Department for Business, Energy & Industrial Strategy (BEIS)

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-Upon-Thames, Middlesex TW18 3HR



1365

Accredited to
ISO/IEC 17025:2017

Geotechnics Limited

Issue No: 020 Issue date: 06 August 2019

The Geotechnical Centre
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Contact: Mr Stephane Schiano
Tel: +44 (0)24 7662 9024
E-Mail: sschiano@geotechnics.co.uk
Website: www.geotechnics.co.uk

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
AGGREGATES	Particle size distribution - sieving method	BS EN 933-1:2012
	Water content	BS EN 1097-5:2008
ROCK	Point load strength and anisotropy indices	ISRM Commission on Testing Methods. Suggested Method for Determining Point Load Strength 1985
	Water content – method 1	International Society for Rock Mechanics – suggested methods, Part 1 Test 1: 1981
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil	Water content	BS EN ISO 17892-1:2014
	Bulk density - linear measurement method	BS EN ISO 17892-2:2014
	Determination of particle density – fluid pycnometer method,	BS EN ISO 17892-3:2015
	Determination of particle size distribution - Sieving method	BS EN ISO 17892-4:2016
	Determination of particle size distribution - Pipette method	BS EN ISO 17892-4:2016
	Incremental loading odometer test	BS EN ISO 17892-5:2017
	Unconsolidated undrained triaxial test	BS EN 17892-8:2018
	Determination of liquid limit (fall cone method)	BS EN 17892-12:2018



1365
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-Upon-Thames, Middlesex TW18 3HR

Geotechnics Limited
Issue No: 020 Issue date: 06 August 2019

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil (cont'd) SOILS for civil engineering purposes	Determination of liquid limit (one-point fall cone method)	BS EN 17892-12:2018
	Determination of plastic limit	BS EN 17892-12:2018
	Determination of plasticity limits	BS EN 17892-12:2018
	Sulphate content of soil and ground water gravimetric method	BS 1377-3:1990 (withdrawn)
	pH value	BS 1377-3:1990 (withdrawn)
	California Bearing Ratio (CBR)	BS 1377-4:1990
	Unconfined compressive strength - load frame method	BS 1377-7:1990
	Undrained shear strength - triaxial compression without measurement of pore pressure	BS 1377-7:1990
	Undrained shear strength - triaxial compression with multistage loading and without measurement of pore pressure	BS 1377-7:1990
	Moisture content - oven drying method	BS 1377-2:1990
	Saturation moisture content of chalk	BS 1377-2:1990
	Liquid limit - cone penetrometer	BS 1377-2:1990
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990
	Plastic limit	BS 1377-2:1990
	Plasticity index	BS 1377-2:1990
	Linear shrinkage	BS 1377-2:1990
	Density - linear measurement	BS 1377-2:1990



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Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-Upon-Thames, Middlesex TW18 3HR

Geotechnics Limited

Issue No: 020 Issue date: 06 August 2019

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS for civil engineering purposes (cont'd)	Particle density - gas jar	BS 1377-2:1990
	Particle density - small pycnometer	BS 1377-2:1990
	Particle density - large pycnometer	BS 1377-2:1990
	Particle size distribution - wet sieving	BS 1377-2:1990
	Particle size distribution - dry sieving	BS 1377-2:1990
	Particle size distribution - sedimentation - pipette method	BS 1377-2:1990
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990
	Maximum and minimum dry densities for granular soils	BS 1377-4:1990
	Moisture condition value (MCV)	BS 1377-4:1990
	MCV/moisture content relation	BS 1377-4:1990
	Chalk crushing value	BS 1377-4:1990
	One-dimensional consolidation properties	BS 1377-5:1990
	Shear strength - small shear box	BS1377-7:1990
	Residual strength - small ring shear apparatus	BS1377-7:1990



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Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
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United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-Upon-Thames, Middlesex TW18 3HR

Geotechnics Limited

Issue No: 020 Issue date: 06 August 2019

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Hydraulically bound and stabilized materials for civil engineering purposes	Initial consumption of lime	BS 1924-2:2018
	California bearing ratio/immediate bearing index	BS EN 13286-47:2012
	Moisture content - oven drying method (definitive)	BS EN 17892-1:2014
	Plastic limit	BS 1924-2:2018
	Liquid limit	BS 1924-2:2018
	Plasticity index	BS 1924-2:2018
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1924-2:2018 and BS EN 13826-2:2010
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1924-2:2018 and BS EN 13826-2:2010
	Dry density/moisture content relationship (vibrating hammer - subsidiary method)	BS 1924-2:2018 and BS EN 13826-4:2003
	Moisture condition value (MCV)	BS EN 13826-46:2003
END		

DATA SHEET - Laboratory Test Symbols



Classification and Strength

Symbol	C - Clay (0 - containing organic matter) Plasticity	M - Silt L - Low I - Intermediate H - High V - Very High E - Extremely High
I_p	Plasticity Index	
%	% retained on 425 μ m sieve, shown under I_p value	
w_L	Liquid Limit	
w_p	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
p_d	Particle Density	
Test	Quick undrained triaxial tests	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm^2)
	NST	Not suitable for test
γ_b	Bulk Density	
σ_3	Triaxial Cell Pressure	
$\sigma_1 - \sigma_3$	Deviator Stress	
##	Excessive Strain	
c_u	Undrained Cohesion	
c	Cohesion Intercept	
ϕ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	
Stab add-	Stabiliser which is added	

Consolidation

m_v	Coefficient of Volume Compressibility
c_{v50}	Coefficient of Consolidation - Log t
c_{v90}	Coefficient of Consolidation - $\sqrt{t}$

Rock

UF	Unacceptable Failure
----	----------------------

Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO_3 %, value in brackets expressed as SO_4 %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
In Water	Sulphate content of groundwater, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

Type	2.5 = 2.5 kg Rammer
	4.5 = 4.5 kg Rammer
	V = Vibrating Hammer

γ_b Bulk Density

γ_d Dry Density

CBR California Bearing Ratio

Type	2.5 = Test on Specimen Recompacted using 2.5 kg Rammer
	4.5 = As above but using 4.5 kg Rammer
	V = As above but using Vibrating Hammer
	M = Test on open drive mould specimen cut in field
	S = Soaked Specimen

Top CBR at top of mould

Bottom CBR at bottom of mould

ND None Detected

※ In the Sample Description denotes a laboratory only description



LABORATORY REPORT



4043

Contract Number: PSL21/4476

Report Date: 09 June 2021
Client's Reference: 5500045257
Client Name: Dets
Park Rd Industrial Estate
South Consett
Co Durham
DH8 5PY

For the attention of: Adam Fenwick

Contract Title: 21-10235
Date Received: 3/6/2021
Date Commenced: 3/6/2021
Date Completed: 9/6/2021

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

M Fennell
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
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awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

4043

PSL

Professional Soils Laboratory

21-10235

Contract No:

PSL21/4476

Client Ref:

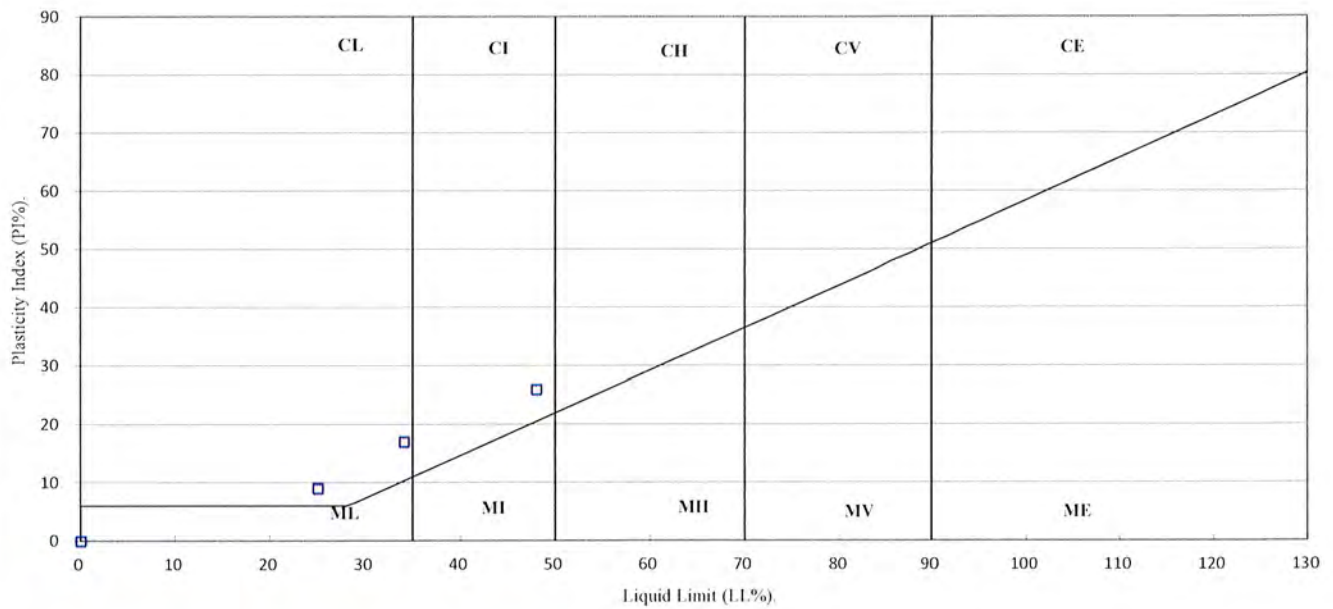
5500045257

(BS1377 : PART 2 : 1990)

SYMBOLS : NP : Non Plastic * : Liquid Limit and Plastic Limit Wet Sieved.

5500045257

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL

Professional Soils Laboratory

21-10235

Contract No:

PSL21/4476

Client Ref:

5500045257

APPENDIX H
Chemical Testing Results



Certificate of Analysis

Certificate Number 21-10235-1

Issued: 16-Jun-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-10235-1

Client Reference 2363

Order No (not supplied)

Contract Title Johnstown

Description 9 Soil samples.

Date Received 17-May-21

Date Started 17-May-21

Date Completed 16-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 21-10235.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



2139

APPENDIX H
Chemical Testing Results



Certificate of Analysis

Certificate Number 21-10235-1

Issued: 16-Jun-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-10235-1

Client Reference 2363

Order No (not supplied)

Contract Title Johnstown

Description 9 Soil samples.

Date Received 17-May-21

Date Started 17-May-21

Date Completed 16-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 21-10235.**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager





Summary of Chemical Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	1847297	1847298	1847299	1847300	1847301	1847302	1847303
Sample ID	TP01	TP02	TP03	TP04	TP05	TP05	TP06
Depth	2.00	0.20	0.20	1.20	1.00	2.00	0.10
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						0.14
Preparation									
Moisture Content	DETSC 1004	0.1	%					16	
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg		15	5.5			0.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		0.6	< 0.2			< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg		0.8	0.2			0.4
Chromium	DETSC 2301#	0.15	mg/kg		17	7.2			3.0
Chromium III	DETSC 2301*	0.15	mg/kg		17	7.2			3.0
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg		52	25			7.3
Lead	DETSC 2301#	0.3	mg/kg		140	38			12
Mercury	DETSC 2325#	0.05	mg/kg		0.16	< 0.05			< 0.05
Nickel	DETSC 2301#	1	mg/kg		19	12			2.9
Selenium	DETSC 2301#	0.5	mg/kg		< 0.5	< 0.5			0.6
Zinc	DETSC 2301#	1	mg/kg		180	51			20
Inorganics									
pH	DETSC 2008#		pH		7.1	7.4	8.1	8.4	8.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.3	0.1			< 0.1
Organic matter	DETSC 2002#	0.1	%		4.7	1.4			0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		52	17	16	14	< 10
Sulphide	DETSC 2024*	10	mg/kg		110	16			36
Sulphur (free)	DETSC 3049#	0.75	mg/kg		< 0.75	< 0.75			< 0.75
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5			< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2			< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5			< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4			< 3.4
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg		< 3.4	< 3.4			< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10			< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01			< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9			< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5			< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6			< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4			< 1.4
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg		< 1.4	< 1.4			< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10			< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	1847297	1847298	1847299	1847300	1847301	1847302	1847303
Sample ID	TP01	TP02	TP03	TP04	TP05	TP05	TP06
Depth	2.00	0.20	0.20	1.20	1.00	2.00	0.10
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10			< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	0.10			< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	0.26			< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.24			< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	0.69			< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.16	5.6			< 0.03
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	0.91			< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.42	3.4			< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg		0.39	2.8			< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.25	0.84			< 0.03
Chrysene	DETSC 3303	0.03	mg/kg		0.20	0.74			< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.22	0.49			< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.09	0.19			< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.12	0.36			< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.09	0.16			0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		0.04	0.06			< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.09	0.17			< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		2.1	17			< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		0.7	< 0.3			0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	1847304	1847305
Sample ID	TP06	TP07
Depth	1.00	1.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	29/04/2021	29/04/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%		
Preparation					
Moisture Content	DETSC 1004	0.1	%	19	15
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg		
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		
Cadmium	DETSC 2301#	0.1	mg/kg		
Chromium	DETSC 2301#	0.15	mg/kg		
Chromium III	DETSC 2301*	0.15	mg/kg		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg		
Lead	DETSC 2301#	0.3	mg/kg		
Mercury	DETSC 2325#	0.05	mg/kg		
Nickel	DETSC 2301#	1	mg/kg		
Selenium	DETSC 2301#	0.5	mg/kg		
Zinc	DETSC 2301#	1	mg/kg		
Inorganics					
pH	DETSC 2008#		pH	7.5	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg		
Organic matter	DETSC 2002#	0.1	%		
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	< 10	< 10
Sulphide	DETSC 2024*	10	mg/kg		
Sulphur (free)	DETSC 3049#	0.75	mg/kg		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		

Summary of Chemical Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	1847304	1847305
Sample ID	TP06	TP07
Depth	1.00	1.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	29/04/2021	29/04/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg		
Acenaphthylene	DETSC 3303#	0.03	mg/kg		
Acenaphthene	DETSC 3303#	0.03	mg/kg		
Fluorene	DETSC 3303	0.03	mg/kg		
Phenanthrene	DETSC 3303#	0.03	mg/kg		
Anthracene	DETSC 3303	0.03	mg/kg		
Fluoranthene	DETSC 3303#	0.03	mg/kg		
Pyrene	DETSC 3303#	0.03	mg/kg		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		
Chrysene	DETSC 3303	0.03	mg/kg		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1847298	TP02 0.20	SOIL	NAD	none	Jordan Farley
1847299	TP03 0.20	SOIL	NAD	none	Jordan Farley
1847303	TP06 0.10	SOIL	Chrysotile	Loose bundles of Chrysotile	Jordan Farley

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 21-10235-1

Client Ref 2363

Contract Title Johnstown

Lab No	1847303
Sample ID	TP06
Depth	0.10
Other ID	
Sample Type	
Sampling Date	29/04/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.138
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.138
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na
Breakdown of Gravimetric Analysis (a)			
Mass of Sample		g	18.57
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	
Breakdown of Detailed Gravimetric Analysis (b)			
% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.138
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)			
Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.

% asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.

Recommended sample size for quantification is approximately 1kg

denotes deviating sample

Information in Support of the Analytical Results

Our Ref 21-10235-1

Client Ref 2363

Contract Johnstown

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1847297	TP01 2.00 SOIL	29/04/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days)	
1847298	TP02 0.20 SOIL	29/04/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1847299	TP03 0.20 SOIL	29/04/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1847300	TP04 1.20 SOIL	29/04/21	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
1847301	TP05 1.00 SOIL	29/04/21	PT 1L		
1847302	TP05 2.00 SOIL	29/04/21	PT 1L	pH + Conductivity (7 days)	
1847303	TP06 0.10 SOIL	29/04/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1847304	TP06 1.00 SOIL	29/04/21	PT 1L	pH + Conductivity (7 days)	
1847305	TP07 1.10 SOIL	29/04/21	PT 1L	pH + Conductivity (7 days)	

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



DETS

Certificate of Analysis

Certificate Number 21-24615

Issued: 23-Nov-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 21-24615

Client Reference PC218362

Order No AUTH-OL31728

Contract Title 2363 Johnstown

Description 3 Soil samples.

Date Received 17-Nov-21

Date Started 17-Nov-21

Date Completed 23-Nov-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-24046

Client Ref 2363

Contract Title Johnstown Additional SI

Lab No	1932738	1932739	1932740	1932741	1932742
Sample ID	TP06	TP04	TP01	TP02	HP1
Depth	0.20	0.30	0.50	0.10	0.30
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	4.0	5.3	11	7.1	15
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	0.4	0.4	0.2	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	0.7	0.9	0.4	1.4
Chromium	DETSC 2301#	0.15	mg/kg	6.3	8.9	14	9.5	19
Chromium III	DETSC 2301*	0.15	mg/kg	6.3	8.9	14	9.5	19
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	18	33	29	74
Lead	DETSC 2301#	0.3	mg/kg	73	65	120	70	150
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.06	0.18	0.07	0.23
Nickel	DETSC 2301#	1	mg/kg	7.3	10	16	13	24
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	86	110	140	150	290
Inorganics								
pH	DETSC 2008#		pH	8.2	9.9	7.6	7.9	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.3	0.2	0.4
Organic matter	DETSC 2002#	0.1	%	0.4	0.7	0.2	1.8	4.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	50	240	140	28	30
Sulphide	DETSC 2024*	10	mg/kg	< 10	39	47	62	210
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10

Summary of Chemical Analysis

Soil Samples

Our Ref 21-24046

Client Ref 2363

Contract Title Johnstown Additional SI

Lab No	1932738	1932739	1932740	1932741	1932742
Sample ID	TP06	TP04	TP01	TP02	HP1
Depth	0.20	0.30	0.50	0.10	0.30
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/2021	19/10/2021	19/10/2021	19/10/2021	19/10/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.05
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.82
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	0.07	2.7
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	0.07	2.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	1.0
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	1.4
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.58
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.98
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.59
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.17
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.70
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	0.25	13
PCBs								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg					< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg					< 0.01
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	0.5

Summary of Asbestos Analysis Soil Samples

Our Ref 21-24046

Client Ref 2363

Contract Title Johnstown Additional SI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1932738	TP06 0.20	SOIL	NAD	none	Lee Kerridge
1932739	TP04 0.30	SOIL	NAD	none	Lee Kerridge
1932740	TP01 0.50	SOIL	NAD	none	Lee Kerridge
1932741	TP02 0.10	SOIL	NAD	none	Lee Kerridge
1932742	HP1 0.30	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 21-24046

Client Ref 2363

Contract Johnstown Additional SI

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1932738	TP08 0.20 SOIL	19/10/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1932739	TP09 0.30 SOIL	19/10/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1932740	TP09 0.50 SOIL	19/10/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1932741	TP10 0.10 SOIL	19/10/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1932742	HP1 0.30 SOIL	19/10/21	GJ 250ml, GJ 60ml x2	Aliphatics/Aromatics (14 days), BTEX (14 days), Sulphur (free) (7 days), Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/- 2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 21-24046

Issued: 18-Nov-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-24046

Client Reference 2363

Order No (not supplied)

Contract Title Johnstown Additional SI

Description 5 Soil samples.

Date Received 10-Nov-21

Date Started 10-Nov-21

Date Completed 18-Nov-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-24615
 Client Ref PC218362
 Contract Title 2363 Johnstown

Lab No	1936059	1936060	1936061
Sample ID	BH01	BH01	BH01
Depth	6.00	9.00	11.00-11.45
Other ID			
Sample Type	D	D	D
Sampling Date	15/11/2021	15/11/2021	15/11/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Inorganics						
pH	DETSC 2008#		pH	8.5	7.7	8.5
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	56	110	180

Information in Support of the Analytical Results

Our Ref 21-24615
 Client Ref PC218362
 Contract 2363 Johnstown

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1936059	BH01 6.00 SOIL	15/11/21	PT 1L		
1936060	BH01 9.00 SOIL	15/11/21	PT 1L		
1936061	BH01 11.00-11.45 SOIL	15/11/21	PT 1L		

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/- 2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :- Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report