APPENDIX H – HAZWASTE ONLINE WASTE CLASSIFICATION REPORT

TETRA TECH

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

QAC9C-OHZNZ-AVD88

Job name

EMT-22-8081-Batch-1-202205311319

Description/Comments

Classification of samples collected from a Ground Investigation at Blaendulais. Classification has been undertaken in line with EA Guidance WM3 Waste Classification: Guidance on the classification and assessment of Waste (1st Edition V1.1) 2018

Project

784-B035256

Site

Blaendulais

Classified by

Name:
Katy Woodhouse
Date:
12 Jul 2022 10:40 GMT
Telephone:

Company:
Tetra Tech (WYG (White Young Green))
5th Floor Longcross Court,
47 Newport Road
Cardiff
CF24 0AD

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	07 Nov 2019

Next 3 year Refresher due by Nov 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP01-16/05/2022-0.30m		Non Hazardous		2
2	TP02-16/05/2022-0.50m		Non Hazardous		5
3	TP03-16/05/2022-0.55m		Non Hazardous		7

Related documents

#	Name	Description
1	EMT-22-8081-Batch-1-202205311319.HWOL	Element .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Katy Woodhouse

Created date: 12 Jul 2022 10:40 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	10
Appendix B: Rationale for selection of metal species	11
Appendix C: Version	12

Classification of sample: TP01-16/05/2022-0.30m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01-16/05/2022-0.30m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		35.7	mg/kg	1.32	47.136	mg/kg	0.00471 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		2.1	mg/kg	2.775	5.828	mg/kg	0.000583 %		
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		35.5	mg/kg	1.462	51.885	mg/kg	0.00519 %		
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.3	mg/kg	2.27	<0.681	mg/kg	<0.0000681 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		87	mg/kg	1.126	97.952	mg/kg	0.0098 %		
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	37	mg/kg	1.56	57.713	mg/kg	0.0037 %		
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		**<LOD**
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18.4	mg/kg	2.976	54.763	mg/kg	0.00548 %		
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		143	mg/kg	2.774	396.703	mg/kg	0.0397 %		
13		TPH (C6 to C40) petroleum group			TPH		174	mg/kg		174	mg/kg	0.0174 %		
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
15		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
18		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	•	pH				8.16	pH		8.16	pH	8.16 pH		
				PH									
20		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
21	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
22	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
23	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			201-695-5	86-73-7									
24	•	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
25	•	anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			204-371-1	120-12-7									
26	•	fluoranthene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			205-912-4	206-44-0									
27	•	pyrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-032-00-3	200-028-5	50-32-8									
33	•	indeno[123-cd]pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
35	•	benzo[ghi]perylene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	37.489	mg/kg	0.00375 %		
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.091 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Not considered flammable per WFD HP3 definition 6 indents testing. Annex III of the Waste Framework Directive (WFD) Council Directive 2008/98/EC. No evidence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0174%)

Classification of sample: TP02-16/05/2022-0.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP02-16/05/2022-0.50m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43.4	mg/kg	1.32	57.302	mg/kg	0.00573 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.8	mg/kg	2.775	2.22	mg/kg	0.000222 %		
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		39.9	mg/kg	1.462	58.316	mg/kg	0.00583 %		
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.3	mg/kg	2.27	<0.681	mg/kg	<0.0000681 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		62	mg/kg	1.126	69.805	mg/kg	0.00698 %		
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	38	mg/kg	1.56	59.273	mg/kg	0.0038 %		
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		26	mg/kg	2.976	77.383	mg/kg	0.00774 %		
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1	mg/kg	2.554	2.554	mg/kg	0.000255 %		
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		91	mg/kg	2.774	252.447	mg/kg	0.0252 %		
13		TPH (C6 to C40) petroleum group			TPH		<52	mg/kg		<52	mg/kg	<0.0052 %		**<LOD**
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
15		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
18		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	•	pH				8.24	pH		8.24	pH	8.24 pH		
				PH									
20		naphthalene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-052-00-2	202-049-5	91-20-3									
21	•	acenaphthylene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			205-917-1	208-96-8									
22	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
23	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			201-695-5	86-73-7									
24	•	phenanthrene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
			201-581-5	85-01-8									
25	•	anthracene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			204-371-1	120-12-7									
26	•	fluoranthene				0.95	mg/kg		0.95	mg/kg	0.000095 %		
			205-912-4	206-44-0									
27	•	pyrene				0.68	mg/kg		0.68	mg/kg	0.000068 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.66	mg/kg		0.66	mg/kg	0.000066 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.81	mg/kg		0.81	mg/kg	0.000081 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
		601-032-00-3	200-028-5	50-32-8									
33	•	indeno[123-cd]pyrene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-041-00-2	200-181-8	53-70-3									
35	•	benzo[ghi]perylene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				17	mg/kg	1.785	30.348	mg/kg	0.00303 %		
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0649 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP03-16/05/2022-0.55m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP03-16/05/2022-0.55m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16.9	mg/kg	1.32	22.313	mg/kg	0.00223 %		
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.2	mg/kg	2.775	3.33	mg/kg	0.000333 %		
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.685	mg/kg	0.0000685 %		
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29.1	mg/kg	1.462	42.531	mg/kg	0.00425 %		
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.3	mg/kg	2.27	<0.681	mg/kg	<0.0000681 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		292	mg/kg	1.126	328.759	mg/kg	0.0329 %		
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	87	mg/kg	1.56	135.704	mg/kg	0.0087 %		
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		**<LOD**
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24.3	mg/kg	2.976	72.323	mg/kg	0.00723 %		
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1	mg/kg	2.554	2.554	mg/kg	0.000255 %		
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		239	mg/kg	2.774	663.021	mg/kg	0.0663 %		
13		TPH (C6 to C40) petroleum group			TPH		158	mg/kg		158	mg/kg	0.0158 %		
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
15		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
18		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	•	pH				7.72	pH		7.72	pH	7.72 pH		
				PH									
20		naphthalene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		601-052-00-2	202-049-5	91-20-3									
21	•	acenaphthylene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			205-917-1	208-96-8									
22	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
23	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			201-695-5	86-73-7									
24	•	phenanthrene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
			201-581-5	85-01-8									
25	•	anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-371-1	120-12-7									
26	•	fluoranthene				0.79	mg/kg		0.79	mg/kg	0.000079 %		
			205-912-4	206-44-0									
27	•	pyrene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.55	mg/kg		0.55	mg/kg	0.000055 %		
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.71	mg/kg		0.71	mg/kg	0.000071 %		
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.44	mg/kg		0.44	mg/kg	0.000044 %		
		601-032-00-3	200-028-5	50-32-8									
33	•	indeno[123-cd]pyrene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-041-00-2	200-181-8	53-70-3									
35	•	benzo[ghi]perylene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				24	mg/kg	1.785	42.844	mg/kg	0.00428 %		
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.143 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Not considered flammable per WFD HP3 definition 6 indents testing. Annex III of the Waste Framework Directive (WFD) Council Directive 2008/98/EC. No evidence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0158%)

Appendix A: Classifier defined and non GB MCL determinands

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

Selected as most appropriate

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2022.192.5237.9831 (11 Jul 2022)
HazWasteOnline Database: 2022.192.5237.9831 (11 Jul 2022)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

TETRA TECH

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

KLKP9-HPFWO-THJ27

Job name

EMT-22-8651-Batch-1-202206070928

Description/Comments

Classification of samples collected from a Ground Investigation at Blaendulais. Classification has been undertaken in line with EA Guidance WM3 Waste Classification: Guidance on the classification and assessment of Waste (1st Edition V1.1) 2018

Project

784-B035256

Site

Blaendulais

Classified by

Name:
Katy Woodhouse
Date:
12 Jul 2022 10:42 GMT
Telephone:

Company:
Tetra Tech (WYG (White Young Green))
5th Floor Longcross Court,
47 Newport Road
Cardiff
CF24 0AD

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	07 Nov 2019

Next 3 year Refresher due by Nov 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS08-19/05/2022-1.90m		Non Hazardous		2
2	WS04-19/05/2022-1.60m		Non Hazardous		4

Related documents

#	Name	Description
1	EMT-22-8651-Batch-1-202206070928.HWOL	Element .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Katy Woodhouse

Created date: 12 Jul 2022 10:42 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	6
Appendix B: Rationale for selection of metal species	7
Appendix C: Version	8

Classification of sample: WS08-19/05/2022-1.90m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS08-19/05/2022-1.90m
Moisture content:
12.3%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12.3% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.6	mg/kg	1.32	6.584	mg/kg	0.000658 %	✓	
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		2.4	mg/kg	2.775	5.931	mg/kg	0.000593 %	✓	
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.2	mg/kg	3.22	0.573	mg/kg	0.0000573 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33.4	mg/kg	1.462	43.469	mg/kg	0.00435 %	✓	
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.3	mg/kg	2.27	<0.681	mg/kg	<0.0000681 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		49	mg/kg	1.126	49.126	mg/kg	0.00491 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	20	mg/kg	1.56	27.779	mg/kg	0.00178 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		**<LOD**
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		55.7	mg/kg	2.976	147.621	mg/kg	0.0148 %	✓	
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		2	mg/kg	2.554	4.548	mg/kg	0.000455 %	✓	
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		116	mg/kg	2.774	286.555	mg/kg	0.0287 %	✓	
13		TPH (C6 to C40) petroleum group			TPH		<52	mg/kg		<52	mg/kg	<0.0052 %		**<LOD**
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
15		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
18		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	•	pH				6.27	pH		6.27	pH	6.27 pH		
				PH									
20		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
21	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
22	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
23	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			201-695-5	86-73-7									
24	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-581-5	85-01-8									
25	•	anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			204-371-1	120-12-7									
26	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-912-4	206-44-0									
27	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
33	•	indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
35	•	benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				31	mg/kg	1.785	49.279	mg/kg	0.00493 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0665 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04-19/05/2022-1.60m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS04-19/05/2022-1.60m
Moisture content:
14.3%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14.3% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4.2	mg/kg	1.32	4.852	mg/kg	0.000485 %	✓	
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.7	mg/kg	2.775	4.128	mg/kg	0.000413 %	✓	
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.2	mg/kg	3.22	0.563	mg/kg	0.0000563 %	✓	
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		42.7	mg/kg	1.462	54.601	mg/kg	0.00546 %	✓	
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.3	mg/kg	2.27	<0.681	mg/kg	<0.0000681 %		**<LOD**
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26	mg/kg	1.126	25.611	mg/kg	0.00256 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	20	mg/kg	1.56	27.293	mg/kg	0.00175 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		**<LOD**
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24.6	mg/kg	2.976	64.056	mg/kg	0.00641 %	✓	
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		2	mg/kg	2.554	4.469	mg/kg	0.000447 %	✓	
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		72	mg/kg	2.774	174.749	mg/kg	0.0175 %	✓	
13		TPH (C6 to C40) petroleum group			TPH		<52	mg/kg		<52	mg/kg	<0.0052 %		**<LOD**
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
15		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
18		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	•	pH				5.59	pH		5.59	pH	5.59 pH		
				PH									
20		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
21	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
22	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
23	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			201-695-5	86-73-7									
24	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-581-5	85-01-8									
25	•	anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			204-371-1	120-12-7									
26	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-912-4	206-44-0									
27	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
33	•	indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
35	•	benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		**<LOD**
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				24	mg/kg	1.785	37.484	mg/kg	0.00375 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0442 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

Selected as most appropriate

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2022.192.5237.9831 (11 Jul 2022)
HazWasteOnline Database: 2022.192.5237.9831 (11 Jul 2022)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

APPENDIX I – CIRIA C552 RISK METHODOLOGY

The following tables are derived from CIRIA C552 and have been used to define the risk rating presented in the Qualitative Risk Assessment matrix.

Classification of consequence

Classification	Definition
Severe	Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution (note; Water Resources Act contains no scope for considering significant pollution) of sensitive water resource. Catastrophic damage to building/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem. (Note the definitions of ecological systems within the Draft Circular on Contaminated Land DETR, 2000).
Medium	Chronic damage to human health ('significant harm', as defined In DETR, 2000). Pollution of sensitive water resources (note; Water Resources Act contains no scope for considering significant pollution). A significant change in a particular ecosystem, or an organism forming part of such an ecosystem. (Note the definitions of ecological systems within the Draft Circular on Contaminated Land DETR, 2000).
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm', as defined In DETR, 2000). Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.

Classification of probability

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely	There is a pollutant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period that such an event would take place, and is even less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Matrix of consequence against probability to gain a risk classification

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

CHILDCARE UNIT BLAENDULAIS, NEATH PORT TALBOT

DESK STUDY AND FIELD RECONNAISSANCE

Report No H1061-21

January 2022

Issue No 1

Carried out for:
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Report No H1061-21

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1 INTRODUCTION

SOCOTEC UK Limited (SOCOTEC) was commissioned in October 2021 by Neath Porth Talbot Council, to carry out a Desk Study and Field Reconnaissance for a proposed childcare unit (single story) in Blaendulais.

This desk study has been prepared in accordance with British Standards BS 5930:2015+A1 (2020) and BS 10175:2011+A2 (2017) and all normative references, including the Environment Agency (2020) online guidance *Land contamination: risk management (LCRM)*.

The Desk Study which incorporates the records of a Field Reconnaissance, see Appendix E presents and discusses the available data obtained for the site and surrounding area regarding its physical, historical and environmental setting. It identifies the potential issues at the site, develops an initial conceptual site model (CSM) for geoenvironmental considerations and provides an assessment of geotechnical aspects and other pertinent ground hazards that could affect the development.

The principal objective of this investigation and the context of the CSM developed within this report is to provide an assessment of potential significant risks in order to:

- Assess the potential requirements for further mitigation or investigation of land contamination risks to ensure that the proposed development will be 'suitable for use'.
- Give an account of the anticipated ground conditions at the site based upon published geological and hydrogeological information.
- Provide an account of any past/historic mining activities on or near the site which may pose a geotechnical risk to the proposed works.
- Provide information for detailed scoping of intrusive investigations.

2 SOURCES OF INFORMATION

The following sources of information have been used in preparation of this report:

- Extracts of available historical Ordnance Survey (OS) maps covering the period from 1876 to 2021 which are presented in Appendix B.

- A Groundsure Enviro + Geo Insight report (ref: GS-8293536 27/10/2021) for an area up to 1 km from the centre of the site which is reproduced in Appendix C. The Enviro Insight report is compiled from the database of information maintained by various statutory bodies listed within Appendix C. It included a series of maps showing the approximate position of the listed data together with details on geology, ground workings, mining and extraction, borehole records and estimated background soil chemistry.
- The British Geological Survey (BGS) website (as viewed during November 2021).
- Consultant Coal Mining Report (ref: GS-8293535 27/10/2021). This is +321reproduced in Appendix D.
- A Field Reconnaissance (Site Walkover Survey) undertaken on 01/11/2021, see site walkover checklist and photographs in Appendix E.
- Public utility service plans in Appendix F.

3 SITE SETTING

3.1 Location and Description

Blaendulais, Seven Sisters is a village which lies 13.5 km northeast of Neath, lying within Neath Port Talbot County Borough. The proposed site is located at National Grid reference SN 819 089, see Site Location Plan in Appendix A. The nearest postcode is: SA10 9DL.

The site is currently an unused, largely overgrown Brownfield site. The topography of the site is stepped, with the highest point being the southern boundary of the site. The site slopes down to the northeast and flattens off for approximately 5 m, then is stepped again parallel with the southern boundary of the site. The remainder of the site is relatively flat. It is a reasonable assumption that the stepped nature of the site is due to the construction/stabilisation of the adjacent road (Commercial Street) to the south.

The site comprises established trees along the south and eastern boundaries of the site and is generally largely overgrown. During the site walkover visit, ground underfoot was damp and in some places, marshy. An electricity substation (appeared to be functioning at the time of the site walkover) is located in the west of the site. A concrete slab (approximately 2.5 m^2) is located to the east of the electricity substation. It is assumed to be associated with the previous use of the site.

The site is bounded by roads to the south (Commercial Street) and west (High Street). A railway line runs parallel with the eastern boundary of the site, this runs in a northeast southwest direction. The land to the north of the site is brownfield (overgrown). The vehicular entrance to the plot of land is approximately 50 m north of the northern site boundary.

Utility plans of the site have not been provided by NPTC. Overhead cables were observed parallel (outside of the site boundaries) with the southern and eastern boundaries.

4 FIELD RECONNAISSANCE

The notes made during the field reconnaissance undertaken on 1 November 2021 together with photographs taken are presented in Appendix E. The site was encountered as described in Section 3.1.

5 PHYSICAL AND HISTORICAL SETTING

The development of the site and surrounding area has been reviewed by reference to the historical maps and is summarised in Table 1 below.

TABLE 1 SUMMARY OF SITE HISTORY

DATE AND MAP SCALE	ON SITE DEVELOPMENT	NEARBY DEVELOPMENT
Ordnance Survey (1877-1879 and 1876-1877) Scales: 1:2,500 and 1:10,560	Undeveloped site. Potential path/bridleway running from north to south through centre of site.	The 'Neath and Brecon Railway' runs parallel with the south-eastern boundary of the site. The railway runs in a northeast southwest direction. A station is located approximately 80 m northeast of the site. A station is noted some 60m to the northeast of the site. Residential dwellings are located approximately 70 m north of the site. The River Dulais is located approximately 260 m to the northwest of the site. This runs in a northeast southwest direction and flows towards the southwest. The Nant-Hit river is located approximately 500 m south of the site. This runs in an east west direction and flows towards the west.

		The Seven Sisters Pit (coal) is located approximately 280 m north east of the site which includes 2 shafts. An 'Old Tramway' is located approximately 150m north of the site.
Ordnance Survey (1899-1904) Scale: 1:2,500	Undeveloped site. Path as previously noted no longer shown.	Residential development extending between 40 m and 180 m to the east of the site. A school is located approximately 80 m southeast of the site. Seven Sisters Pit (coal) is now named 'Seven Sisters Colliery'. A reservoir is located approximately 300 m northeast of the site. (This was noted on previous historic maps, however not noted as a reservoir)
Ordnance Survey (1918) Scale: 1:2,500	Buildings (unknown uses) constructed to north and northwest of the site. These extend slightly inside site boundary.	A road (Commercial Street) has been constructed along the southern boundary of the site. Significant residential development extending between 20 m and 300 m to the east and southeast of the site.
Ordnance Survey (1961-1962) Scale 1:2,500	Land use and features remains the same.	Significant residential development extending between 250 m and 500 m to the southeast of the site.
Ordnance Survey (1988-1933) Scale 1:2,500	Land use and features remains the same.	Seven Sisters Colliery Fire station is located approximately 170 m to the northwest of the site.
Ordnance Survey (2003) Scale 1:1,250	Building (unknown use, however presumed to be previous flats as known from anecdotal evidence) constructed to north of the site, extending into the site boundary. PC (understood to be public toilets as known from anecdotal evidence) located in the west of the site.	Further development of residential dwellings seen in the wider area.

6 PROPOSED DEVELOPMENT

From information provided by NPTC it is understood that the purpose of this desk study is to inform of site conditions for the proposed development of a childcare unit (single story) to include, but is not limited to the following:

- The construction of a single story child care unit (shown to include toilets, store rooms, kitchens and plant rooms).
- Staff and public parking area.
- Bin store
- Existing substation indicated to remain.

7 SITE GEOLOGY AND ENGINEERING GEOLOGICAL MODEL

7.1 Published Geological Information

The published geological map for the area, BGS Sheet 231 (1979), and the BGS GeoIndex Onshore online viewer (2021) show the north of the site to be located on recent Glaciofluvial deposits (Diamicton Till). The south of the site is not shown to contain superficial deposits.

The underlying bedrock is indicated to comprise South Wales Middle Coal Measures Formation of Carboniferous age characterised by Mudstone, Siltstone and Sandstone.

7.2 Surface Ground Workings

The GeoInsight report indicates 1 historical surface ground working feature on site which is reported to be a mill pond in 1921.

The GeoInsight report records 8 ground workings within 250 m of the site. These are summarised below. It should be noted that the GeoInsight report records 27 surface ground workings within 250 m of the site, however a number of these are duplicated.

- 3 m SE, Colliery (unknown, no details provided)
- 15 m SE, Cuttings (associated with adjacent railway)
- 47 m S, Cuttings
- 72 m NE, Colliery
- 115 m SW, Cuttings
- 150 m NE, Colliery
- 200 m NE, Refuse heap
- 246 m NE, Refuse heap

7.3 Underground Workings (including mining and extraction)

The Coal Authority report indicates that there has been historic coal mining undertaken on site. The Gorwllyn Seam (workable) is recorded to outcrop on site.

There are no mine entries within 100 m of the site. In addition to this there are no faults or fissures recorded.

The GeoInsight report holds 5 records of underground (coal and non-coal) mining within 1 km of the site. These are summarised below. It should be noted that the GeoInsight report indicates 14 records, however a number of these are duplicates.

- 88 m NE, unspecified mine
- 135 m NE, colliery
- 224 m NE, coal pit
- 271 m to 290 m NE, unspecified shafts
- 992 m NE, coal pit

7.4 Hydrogeology and Groundwater Abstraction

The hydrogeological characteristics of the site are summarised below:

TABLE 2 SUMMARY OF HYDROGEOLOGICAL CHARACTERISTICS

HAZARD	REMARKS
Aquifer Classification within Superficial Geology	The site is not located on a superficial aquifer. A Secondary Undifferentiated Aquifer is located approximately 20 m to the north of the site, and extends to the east and west of the site.
Aquifer Classification within Bedrock	The site is located entirely on a Secondary A bedrock aquifer.
Groundwater/ Potable Water Licence Abstraction	There are no active groundwater abstraction points within 2 km of the site.
Source Protection Zones	The site is not located within a Source Protection Zone.

7.5 Hydrology, Flooding and Surface Water Abstraction

Information on the hydrological characteristics of the site are summarised below:

TABLE 3 SUMMARY OF HYDROGEOLOGICAL CHARACTERISTICS

HAZARD	REMARKS
Surface Water Features / River Network	The River Dulais is located approximately 300 m northwest of the site. This runs is a northeast southwest direction and flows in a south-westerly direction. An unnamed watercourse is located approximately 90 m to the southwest of the site. This runs in a northeast southwest direction and flows in a south-westerly direction.
Surface Water Flood Risk	The site is not at risk of surface water flooding.
Fluvial Flood Risk	The site is not at risk of fluvial flooding.
Flood Defences / Groundwater Flooding / Susceptibility and Confidence Areas	The site is at negligible risk of groundwater flooding. The site is classed as “Secondary Bedrock Aquifer – Low Vulnerability”

8 GEO- HAZARDS

Information on various geological hazards is contained within the Groundsure GeoInsight report, and the risks categorised between *Negligible* and *High* as follows.

TABLE 4 SUMMARY OF POTENTIAL GEOLOGICAL HAZARDS

HAZARD	RISK CATEGORY	REMARKS
Shrink Swell Clay	Very Low	-
Landslides	Very Low	It should be noted that land directly to the east of the site is at ‘Low’ risk of landslides.
Ground Dissolution of Soluble Rocks	Negligible	-
Compressible Deposits	Negligible	-
Collapsible Deposits	Very Low	-
Running Sands	Negligible	-
Ground Workings – on-site and offsite	Yes	On-site: historical mill pond (1921) Offsite: • 3 m SE, Colliery (unknown, no details provided)

		• 15 m SE, Cuttings (associated with adjacent railway) • 47 m S, Cuttings • 72 m NE, Colliery • 115 m SW, Cuttings • 150 m NE, Colliery • 200 m NE, Refuse heap • 246 m NE, Refuse heap • 88 m NE, unspecified mine • 135 m NE, colliery • 224 m NE, coal pit • 271 m to 290 m NE, unspecified shafts • 992 m NE, coal pit
Mining, Extraction and Natural Cavities – on-site and offsite	Yes	See section 7.3
Artificial Ground	No	Artificial is likely to be present given the previous use of the site and the close proximity to development.

8.1 Ground Gas

8.1.1 Radon

According to the Geo Insight report the estimated proportion of homes near the site that are above the radon action level is less than 1%.

8.1.2 Coal Measures

Coal measures are known to underlie the site, the principal ground gasses associated with the Coal Measures are methane (CH4,) hydrogen sulphide (H_2S) and carbon dioxide (CO_2). All of these gases are considered detrimental to human health. Methane is potentially explosive in particular concentrations while H_2S and CO_2 are considered to be asphyxiants.

8.1.3 Made Ground

According to the Geo and Enviro Insight report, the site and surrounding land does not contain made ground, however given the surrounding development, it is likely that some thickness of made ground may be present. It is also likely that the former mill ponds have been infilled and therefore some

thickness of Made Ground is likely associated with this feature. Given the perceived relatively shallow bedrock Made Ground is not anticipated to be particularly deep.

8.1.4 Landfill

The Geo and Enviro Insight report indicates that there are no current or historical landfills on site. There are 2 records of historical landfills located approximately 197 m NE and 275 m N of the site. The type of landfill is unknown, thus the materials are not well understood at the desk study stage and may have potential for the generation of ground gas.

A historical mill pond has been identified on site and it is assumed that this has been backfilled at some point especially prior to the previous development. There are no details available for the type of back fill used (or its source) and the use of the mill pond is unknown. Therefore, the material uses associated with the back fill and use of the mill pond(s) may be a potential source of ground gases. The mill pond(s) are not shown on the historical maps so their location cannot be confirmed.

9 OTHER CONSIDERATIONS

9.1 Archaeology and Ecology

No archaeological or ecological consultation has been undertaken as part of this study. As such, both will require specialist assessments, if required, at a later stage.

9.2 Unexploded Ordnance (UXO)

The Zetica Unexploded Ordnance (UXO) Risk Map indicates there is a low UXO risk on and in the vicinity of the site.

9.3 Utilities

Given the largely built up residential and commercial surroundings, the site and surrounding area are likely to contain underground services and as such available public utility plans were supplied by NPTC to SOCOTEC in January 2022. The details of which are summarised below:

- Openreach (BT Apparatus) – None shown on site area, however apparatus are shown bounding the site to the northwest and southwest, which are likely to be external to the site in the pavement.

- Western Power Distribution (Electricity) – An existing electricity sub station is located on the site and connecting underground cables, comprising two high voltage (HV) 11kV cables and three low voltage (LV) cables) are shown from the sub station, trending to the north west towards High Street. Two underground LV cables are shown from the sub station, trending to the south west towards Commercial Street. In addition, a HV 11kV cable and two LV cables are shown entering the south eastern corner of the site area from the A4109. Further HV and LV cables are shown bounding the site to the northwest and southwest, which are likely to be external to the site in the pavement.

- ESP Utilities Group (Gas) – None shown on site area.

- Wales & West Utilities (Gas) – None indicated on site area.

- Virgin Media (Fibre Optic Cables) – None shown on site area.

- Dwr Cymru Welsh Water (Water and Drainage) – None shown on site area.

During the site reconnaissance, a gas pipe (above ground) was observed. This appears to protrude from the south and is then directed towards the east, over the railway and then under the A4109 to the east of the site.

No drainage was observed within the site boundary, however a drainage cover was observed approximately 45 m to the northeast on the hardstanding vehicular access to the plot. This cover was not lifted during the site reconnaissance.

Overhead services run parallel with the roads to the east (High Street) and south (Commercial Street) of the site. These lie outside the site boundaries.

10 ENVIRONMENTAL SETTING

10.1 Designated Environmentally Sensitive Sites

In the context of this report sensitive land usage covered by the Enviro Insight report includes the following:

- Sites of Special Scientific Interest (SSSI) and Ramsar.
- Local and National Nature Reserves (LNR, NNR,).
- Special Protection Areas (SPA) and Special Areas of Conservation (SAC).
- World Heritage Sites and Ancient Woodlands.
- Areas of Outstanding Natural Beauty (AONB) and Environmentally Sensitive Areas (ESA).
- Forest and National Parks.
- Nitrate Sensitive Areas and Nitrate Vulnerable Zones (NSA, NVZ).

The proposed development site does not lie within or close to any sensitive land uses as defined by the Enviro Insight report with the exception of Designated Ancient Woodland. The Geo and EnviroInsight report records of 12 Ancient Woodlands between approximately 200 m and 2 km from the site.

10.2 Environmental Permits, Incidents and Registers Map

10.2.1 Industrial Sites Holding Licences and/or Authorisations

According to the EnviroInsight report, there is a licensed discharge to controlled waters (the River Dulais) approximately 485 m W of the site. A historic licence (1963) and a current permit (2019 to present) is in place at this location. This is for the discharge of sewer storm overflow (water company).

10.2.2 Dangerous or Hazardous Sites

According to the information provided in the EnviroInsight report there are no Dangerous or Hazardous sites or substances within 2 km of the site.

10.2.3 Environment Agency Recorded Pollution Incidents

According to the EnviroInsight report, there are 9 records of substantiated pollution incidents within 500 m of the site. These are summarised in Table 5 below (listed by increasing distance from the site). It should be noted that the Geo and EnviroInsight report records 16 pollution events, however a number of these appear to be duplicated.

TABLE 5 SUMMARY OF POTENTIAL POLLUTION INCIDENTS

DATE AND LOCATION	POLLUTANTS AND REMARKS	WATER, LAND AND AIR IMPACTS
3 Jan 2014 143 m E	Contaminated Water (fire-fighting runoff)	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
13 Feb 2003 190 m E	Oils and Fuel (diesel)	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
18 October 2002 216 m S	Oils and Fuel (diesel)	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
12 June 2007 267 m N	Sewage Materials (crude sewage)	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
18 May 2001 346m N	Not identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11 June 2007 359 m W	Inert Materials and Wastes	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category4 (No Impact)
6 April 2001 and 4 June 2001 390 m E	Construction and Demolition materials and wastes, asbestos commercial waste, household waste, tyres and vehicle parts	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
6 May 2015 412 m NE	Sewage Materials (crude sewage)	Water Impact: Category - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

10.2.4 Sites Determined as Contaminated Land Under Part 2A EPA 1990

The Enviro Insight report does not list any Environmental Permits, Incidents or Registers within 500 m of the site.

10.3 Landfill and Other Waste Sites

10.3.1 Landfill Sites

According to the information provided in the Enviro Insight report there are 2 historic (circa 1962) landfills within 500 m of the site. These are located 197 m NE and 275 m N of the site.

10.3.2 Other Waste Sites

In addition to the historical landfills listed in Section 10.3.9, the Enviro Insight report states that there is 1 waste exemption site located 254 m W of the site. This is listed to be ‘use of waste in construction, on a farm’.

10.4 Current Land Uses

The Enviro Insight report covers other potential contamination sources close to the site including:

- Current Industrial Data
- Petrol and Fuel Stations
- Underground High Pressure Oil and Gas Pipelines
- Hazardous substance storage/usage
- Licensed pollutant release (Part A(2)/B)
- Licenced discharges to controlled waters

According to the Enviro Insight report, the proposed development site does not lie within or close to any of the above types of site, however during the site reconnaissance, an electricity substation was observed (functioning) in the west of the site.

11 INITIAL GEOENVIRONMENTAL CONCEPTUAL SITE MODEL

11.1 General

In line with existing legislation and the current regime for the management of contaminated land, assessments are undertaken using a risk based approach. It is necessary to define a Conceptual Site Model (CSM) for the site which identifies the potential sources of contamination, the receptors and the pathways that can connect them. In order for there to be a risk from contamination, one or more relevant pollutant linkages must exist, connecting a contamination source, a receptor (an entity which might be affected by the contamination) and a pathway (or mechanism) by which the receptor can be exposed to the contaminant.

A discussion of potential sources, pathways and receptors and a tabulated summary of the CSM indicating potential pollutant linkages follows. The criteria used for assessing the relevance of identified potential pollutant linkages are based on the objectives stated above.

It is assumed that the “Childcare Unit” development will be for the use of children and staff. It is understood this will not involve the cultivation of plants for consumption so is may be considered a commercial property.

There are no known environmental receptors associated with this development.

11.2 Potential Sources of Contamination

Potential sources of contamination are usually associated with current and former industrial activities, where the processing, storage, use, transportation and disposal of raw materials, products and wastes often leads to the contamination of underlying ground and groundwater. In addition, natural processes can also give rise to contamination such as hazardous gases.

Based on the information presented above, potential sources of contamination from current and historical site uses and from potentially significant off site sources have been assessed. Potential sources of contamination and contaminants at and within the site boundary are summarised in the table below. These are based in the desk study data obtained and published guidance.

TABLE 6 POTENTIAL SOURCES OF CONTAMINATION

SITE USE / ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Current on-site:		
Electrical Substation	Leaks of coolant from plant as they age.	Polychlorinated biphenyls (PCBs)
Coal seam outcropping beneath site	Ground gas generation	Harmful ground gasses H_2S, CH_4 and CO_2
Previous building remains	Degradation of macadam material leaching into the soils. Possible old services leaks, demolition rubble.	Unknown; possible hydrocarbons, metals, inorganic and organic contamination and asbestos
Historic on-site:		
Past building on site	Unknown.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination.
Railway sidings	Spills and tipped material associated with the rails use and transport.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination and asbestos
Mill pond(s)	Material that settled in mill pond and source of infill not known.	Unknown; possible hydrocarbons, metals, inorganic and organic contamination and asbestos
Coal Mining (Surface)	Unknown though machinery and infrastructure may have been present.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination, potential asbestos.
Coal Mining (underground)	Ground gas generation	Harmful ground gasses H_2S, CH_4 and CO_2
Possible toilet block	Unknown	Unknown possible inorganic and organic contamination.
Current offsite:		
Gas pipe line	Leaks from pipe as it aged	Possible hydrocarbons
Historical offsite:		
Railway, tramway and station	Spills and tipped material associated with the rails use and transport.	Unknown possible hydrocarbons, heavy metals, inorganic and organic contamination and asbestos

11.3 Potential Migration Pathways

The following potential pathways have been identified as potential migration pathways:

- Direct soil, soil dust and/or water ingestion.
- Inhalation of soil dust, soil vapour and/or water vapour.
- Dermal contact with contaminated soil, soil dust and/or water.
- Consumption of home-grown produce and soil attached to home-grown produce.
- Lateral and vertical migration of gases and/or vapours through permeable strata.
- Permeable ground conditions/rainfall infiltration.
- Leaching of contaminants from soils into soil pore water and shallow groundwater.
- Downward migration of soil pore water and shallow groundwater.
- Lateral groundwater flow.
- Preferential pathways including existing and proposed services trenches and foundations.
- Surface water runoff into drains.

11.4 Potential Receptors

Potential receptors have been identified and categorised as follows:

11.4.1 Human Health

- Construction workers (during construction phase)
- Future site users
    - Adult staff
    - Male and female children of various ages
- Neighbouring site occupants (residential and light commercial properties within close proximity to site).
- Maintenance workers

11.4.2 Controlled Waters

- Bedrock is a Secondary A Aquifer.
- River Dulais is located approximately 300 m northwest

11.4.3 Environmental Receptors

There are no known environmental receptors. The nearest is a designated woodland 201 m north of the site but is considered sufficiently far from the site for there be no risk.

11.4.4 Property, Buildings, Structures and Services

Any on or near-site, property, buildings, structures or services, within a location which is unduly effected by pollution and suffers damage or increased deterioration as a consequence, these features are likely to include:

- On-site underground infrastructure associated with the proposed development.
- On-site above-ground infrastructure associated with the proposed development.
- On-site infrastructure associated with the existing development.
- On-site foundations for buildings, both for permanent structures and temporary buildings.
- On-site damage to services which form part of the larger local and national infrastructure.
- Offsite damage to the foundations of nearby properties and roads.
- Offsite damage to any neighbouring services.

11.5 Summary

The relevant pollutant linkages based on the potential sources, pathways and receptors outlined above are tabulated below:

TABLE 7 INITIAL CONCEPTUAL SITE MODEL

SOURCE	PATHWAY	RECEPTOR
Current onsite: - Electrical Substation - Previous Building remains and demolition rubble - Coal Seam Beneath Site Contaminants: - PCBs - Hydrocarbons	Ingestion, direct contact, inhalation of dust and vapours. Migration via permeable strata into groundwater. Direct contact with contaminated soils and waters. Lateral Groundwater Migration. Ground gas generation.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.

- Possible metals - Inorganic and organic contaminants - Asbestos - Ground gases		
Historic onsite: - Past building on site - Railway sidings - Mill Pond(s) - Coal mining (surface) - Coal mining (underground) - Possible toilet block Contaminants: - Hydrocarbons, - Metals, - Inorganic and organic contamination - Ground gases - Asbestos - Unknown in places	Ingestion, direct contact, inhalation of dust and vapours. Migration via permeable strata into groundwater. Direct contact with contaminated soils and waters. Lateral Groundwater Migration. Ground gas generation.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.
Current offsite: - Gas pipe line Contaminants: - Possible Hydrocarbons,	Lateral Groundwater Migration. Ground gas generation.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.
Historical offsite: - Mining processes, - Railway, tramway and station Contaminants: - Hydrocarbons - Metals - inorganic and organic contamination - Asbestos	Dust migration to site. Lateral Groundwater Migration. Given the proximity to the site of these sources there is also potential for contaminated material to have been moved during the previous site developments.	Workers at time of site development. Future maintenance workers for upkeep of site. Future site users. Aquifers underlying the site.

There are currently a series of uncertainties and assumptions in the CSM presented above as this is based on desk study information only:

- Ground conditions have been conceptualised based on BGS geological maps and other primarily desk based information.
- The presence and extent of any suspected contamination is unknown in the absence of site investigation data.
- The presence and depth of any groundwater bodies at the site is currently unknown.
- The ground gas regime within the site has not been characterised.
- The site has been developed previously (unknown use) and there was a former mill pond on the site though its location is not known.

12 PRELIMINARY RISK ASSESSMENT

12.1 Assessment of Environmental Risks Methodology

The identification of potential pollutant linkages is a key aspect of the evaluation of potentially contaminated land. An approach based on CIRIA report C552 has been adopted. For each of the pollutant linkages, an estimate is made of:

- The potential severity of the risk; and
- The likelihood of the risk occurring.

Table 8 below presents the classification of the severity of the risk:

TABLE 8 SEVERITY OF RISK

RISK FACTOR	TYPICAL EXAMPLES
Severe	Acute risks to human health; Major pollution of controlled waters (<<the water environment>>).
Medium	Chronic (long-term) risk to human health; Pollution of controlled waters (<<the water environment>>).
Minor	Damage to non-sensitive species or ecosystems, buildings or services.

The probability of the risk occurring is classified according to the criteria provided in Table 9 below:

TABLE 9 PROBABILITY OF RISK OCCURRING

PROBABILITY RATING	DESCRIPTION
High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
Low Likelihood	Pollutant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

An overall qualitative evaluation of the level of risk is gained from a comparison of the severity and probability as presented in Table 10 below:

TABLE 10 RISK RATING EVALUATION

		SEVERITY		
		SEVERE	MEDIUM	MINOR
PROBABILITY	HIGH LIKELIHOOD	Very high risk	High Risk	Moderate / low risk
	LIKELY	High risk	Moderate risk	Low risk
	LOW LIKELIHOOD	Moderate risk	Moderate/ low risk	Very low risk
	UNLIKELY	Moderate / low risk	Low risk	Very low risk

12.2 Preliminary Risk Assessment

Table 11 below details the potential risks associated with the various potential pollutant linkages identified through the assessment of the data collated in this report. The risk category should be

reviewed if further information is made available or the environmental setting of the site changes, for example through a proposed change in the development layout or end use.

TABLE 11 PRELIMINARY RISK ASSESSMENT

SOURCE	PATHWAY	RECEPTOR	SEVERITY	PROBABILITY	RISK RATING	COMMENTS
Onsite: Soils and Waters beneath the development and hardstanding, electrical substation, coal seam beneath site and previous building remains Hydrocarbons, PCBs, Metals, Inorganic and organic contamination, Asbestos	Ingestion, direct contact, inhalation of dust	Construction site workers Future users Maintenance workers	Severe	Likely	High risk	The mill pond(s) and railway sidings are possible sources of unknown contamination formerly present on site. PCBs may also be present if the electrical substation has leaked.
	Consumption of home grown vegetables	Future users	Medium	Likely (depending on the end use may be unlikely)	Moderate risk	If home grown vegetables are to be consumed there is a moderate risk.
	Leaching and downward migration	Groundwater in the River Terrace Deposits	Medium	Low likelihood	Moderate/low risk	The soils beneath the site have been in place for a prolonged period so leaching is likely to have occurred though may increase if the new development affects the local groundwater regime.
	Lateral Groundwater Migration	River Dulais	Medium	Likely	Moderate risk	The soils beneath the site have been in place for a prolonged period so leaching is likely to have occurred though may increase if the new development affects the local groundwater regime.
Ground gases CO_2, H_2S, CO_4	Build-up of dangerous gases within buildings or excavations	Construction site workers Future users	Severe	Likely	High risk	The presence of potential gas generating seams and workings beneath the site and the potential for thicknesses of Made Ground mean ground gases are likely to be generated beneath the site.
Offsite: Soils and waters	Leaching and downward migration	Construction site workers	Medium	Low Likelihood	Moderate/ low risk	The nearby railway sidings and gas main may pose a potential

Hydrocarbons, PCBs, Metals, Inorganic and organic contamination,		Future users Maintenance workers				risk given the close proximity to the site they may pose a potential moderate to low risk.
	Lateral Groundwater Migration	Construction site workers Future users Maintenance workers	Medium	Low Likelihood	Moderate/ low risk	The nearby railway sidings and gas main may pose a potential risk given the close proximity to the site they may pose a potential moderate to low risk.
	Dust transportation of soil particles	Construction site workers Future users Maintenance workers	Medium	Low Likelihood	Moderate/ low risk	The nearby railway sidings and gas main may pose a potential risk given the close proximity to the site they may pose a potential moderate to low risk.

13 GEOTECHNICAL ASPECTS

13.1 Anticipated Ground Model and Potential Hazards

The anticipated ground conditions are expected to comprise potentially an unknown thickness of made ground over Glaciofluvial deposits in the north, though these superficial deposits are noted as being absent in the south of the site. Below the superficial deposits is bedrock of the South Wales Middle Coal Measures Formation. The groundwater table is unknown at this stage.

13.2 Possible Foundation Options

Although the general outline of the development is available, no details of the proposed foundation or the loads have been provided to SOCOTEC at this time. It should also be noted that the soils and bedrock beneath the site are not known at this stage and need to be verified by an intrusive investigation. There is potential for the some areas of the site to have made ground and superficial deposits to a significant depth. The presence of a former mill pond(s) means there may be locally thicker Made Ground that may not be suitable as a founding stratum.

Generally, shallow foundations will most likely be sufficient for most buildings depending on the final loadings and ground conditions encountered during the intrusive investigation. However should made ground or soft/low-density strata be found (such as the former mill pond) to substantial depths then shallow foundation methods such as strip foundations may not be suitable. Alternative to shallow foundations such as piled foundations or ground improvement techniques may be considered though the probable shallow bedrock may mean these are unlikely to be required subject to the intrusive investigation. More over there is a potential for boulders to be encountered in the superficial deposits such as the Glaciofluvial deposits, which may affect foundation design.

13.3 Excavations

A concrete slab is present on the west of site (approximately 2.5 m^2) and given the previous development there is potential for obstructions to be present from old foundations, service runs, floor slabs and demolition material from the previous materials.

Bedrock may be shallow and considerations for excavating this type of material needs to be taken. Excavations will be subject to potential variability of thickness of made ground and superficial deposits. Generally, excavations should be possible with standard excavation machinery. An intrusive investigation will be required to provide further details on the material likely to be encountered during excavations on site. Under no circumstances should anyone enter unsupported excavations due to the risk of collapse.

13.4 Pavement / Hardstanding

It may be possible for potential hardstanding at the site to use traditional pavement design (dependant on an interpretive geotechnical report). Should such pavement be required then California Bearing Ratio (CBR) testing should be undertaken in the areas where this is proposed. Given the understood ground model at this stage, CBR insitu testing is recommended as part of the intrusive investigation.

13.5 Drainage

The drainage capacity for the site is unknown with Glaciofluvial and the shallow bedrock likely to have relatively poor and variable drainage characteristics. Other services on the site are likely to encounter potentially contaminated Made Ground and some, such as water mains, may require additional testing for the installation of any new buried services at the site. The service providers should be consulted for their requirements should new or additional services be required as part of the development.

As part of the development, any services and utilities which have become redundant should be decommissioned and pipe services sealed appropriately. The alteration and any extensions to the current service and utility network on and offsite should be carefully inspected to ensure their suitability. Due to the risk for contaminant intrusion into the pipework and infrastructure, all pipework must be appropriately located before any groundworks beginning at the site. Such groundwork should conform to best guidance and standards including 'PAS 128 - Specification for underground utility detection, verification and location' and 'HSG 47 – Avoiding danger from underground services'.

14 CONCLUSIONS AND RECOMMENDATIONS

14.1 Conclusions

Geoenvironmental and geotechnical hazards may both be encountered on this site – geotechnical hazards are likely to be low but potentially high if the coals seam outcropping beneath the site has been worked, while geoenvironmental hazards may pose moderate risk. A ground investigation should be carried out to confirm the ground conditions, groundwater levels and ground gas at the proposed development locations to provide information to allow for the assessment of geotechnical parameters to be used for preliminary design of foundations along with an assessment of potential contamination on and beneath the site.

14.1.1 Preliminary Risk Assessment

The information available at this stage indicates there are potential current and historical sources of contamination on or beneath the site. The sources of these are the hard standing, past mining, former railway sidings and mill pond(s). There are likely to be contaminated soils beneath the site and as the use of soft verges has not been ruled out (neither has the production of edible plants) there is a clear pathway linkage for these to pose a risk to the end users and maintenance workers post development and construction workers during development. The potential for a thicknesses of Made Ground, to be present also means that there is potential for ground gases to also pose a risk.

Further risks are also posed by the surrounding rail sidings further from the site, though the reduced likely pathways mean these pose a lower risk than those present on the site.

A ground investigation should be carried out to confirm the ground conditions and allow assessment of the contamination potentially present at the site. Based on these finding a full geoenvironmental assessment will be required to assess the risks posed to the development and its receptors.

14.1.2 Geotechnical Risk Assessment

The information at desk study stage indicates the site is underlain by coal bearing strata that has been subject to mining both in the area surrounding and directly beneath the site. There is a coal seam recorded as outcropping directly beneath the site and though this is not recorded as having been

worked its shallow nature means it may have been worked but not recorded. Therefore it may pose a potentially significant risk to the development. In addition the deeper worked and shallow seam are also potentially sources for the generation of ground gases.

A ground investigation should be carried out to confirm the ground conditions at the development. This will allow for the assessment of geotechnical parameters for the design of the new development and further assess the risk posed by the past mining.

14.2 Recommendations

It should be appreciated that the desk study can only give indications of the likely geotechnical and geoenvironmental conditions and consequently an intrusive investigation is recommended to confirm or otherwise the findings.

- Trial pits or dynamic windowless sampling on the site to acquire suitable geotechnical and geoenvironmental samples across the site.
- Depending on the nature of the proposed structure a combined dynamic sampling and rotary coring boreholes to 5 to 10 m for foundation design and to provide deeper samples for geotechnical and geoenvironmental testing. The requirement of these will depend on the final development.
- Deep (30 m) rotary probe holes to prove sufficient coverage of superficial deposits or competent bedrock and to allow an assessment of the risk posed by any potential past shallow mine workings.
- Combined groundwater and ground gas monitoring installations to allow long term monitoring.
- In situ soakaways in trial pits and/or boreholes if soakaways form part of the proposed development.
- Geoenvironmental testing to include asbestos, metals, hydrocarbons (including SVOC and VOCs), inorganic and organic compounds and potentially PCBs.
- Geotechnical lab testing and assessment of the soils for foundation design and risk from shallow mining.
- Geoenvironmental assessment of the soils beneath the site for human health risk assessment and waste disposal.

The scope of the investigation will be dependent on the final design of the structures and their location so should be reviewed once these are known.

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BGS GeoIndex Onshore : 2021. www.bgs.ac.uk. British Geological Survey.

BS 5930:2015+A1 : 2020 : Code of practice for ground investigations. British Standards Institution.

BS 10175:2011+A2:2017 : Investigation of potentially contaminated sites – Code of practice

BS EN 1997-2 : 2007 (Incorporating corrigendum June 2010) : Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. British Standards Institution.

Zetica UXO Risk Map : 2021 : https://zeticauxo.com/downloads-and-resources/risk-maps/ Zetica

APPENDIX A
FIGURES AND DRAWINGS

Site Location Plan	A1
Site Plan	A2

Site Location Plan

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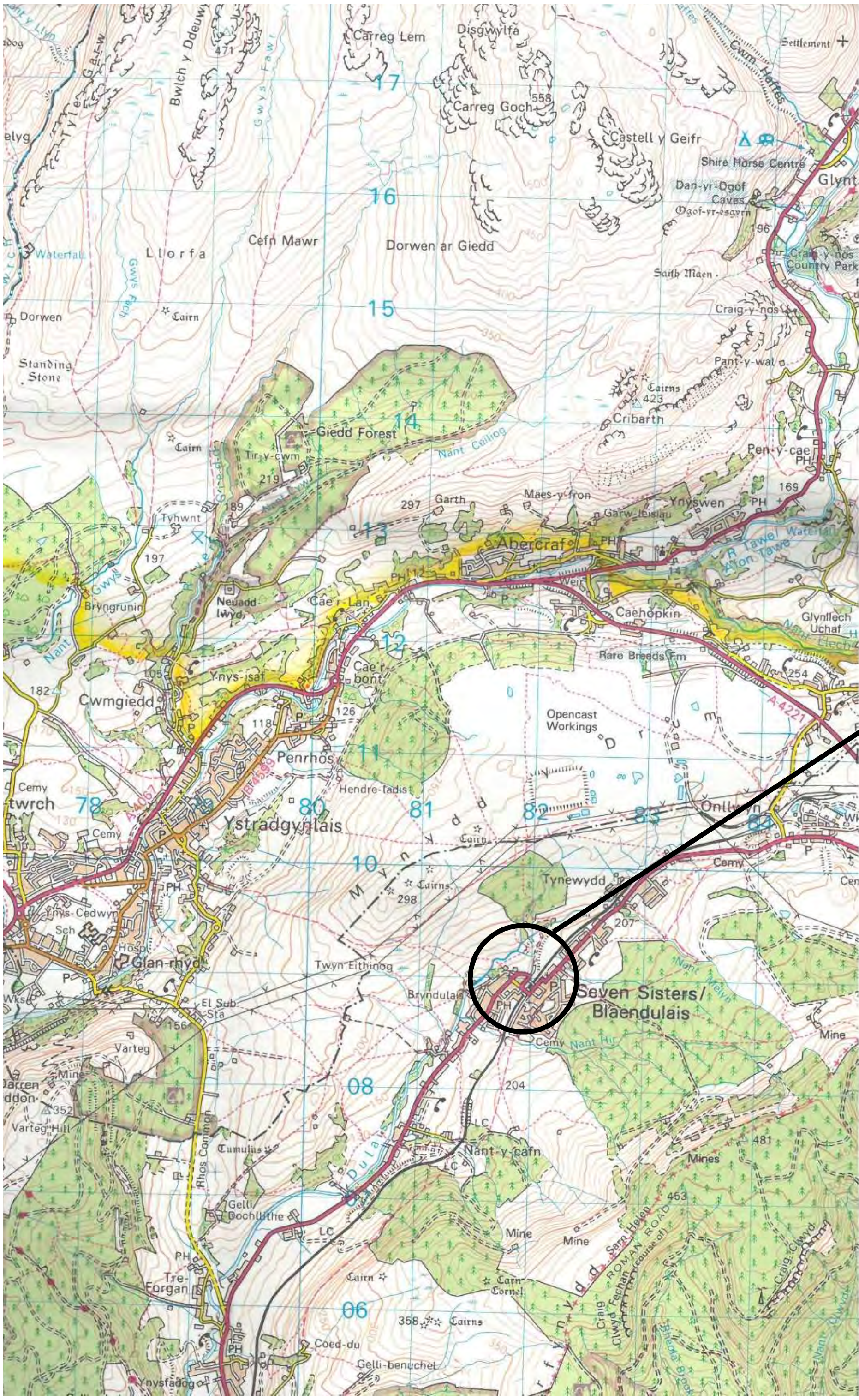

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Notes: Scale 1:50 000	**Project**	**Childcare Unit Blaendulais**	**Figure**
	Project No.	**H1061-21**	**A1**
	Carried out for	**Neath Port Talbot Council**	

Rev.

Drg. No.

Project

NOTES

1. All dimensions in millimetres unless otherwise stated.

Rev	Details	Dr	Ch	Apr	Date

Neath Port Talbot
Castell-nedd Port Talbot
County Borough Council Cyngor Bwrdeistref Sirol
Making a difference Gwahaniaeth er gwell

PROPERTY & REGENERATION
Nicola Pearce BSc(Hons) DipTP MRTPI
DIRECTOR OF ENVIRONMENT AND REGENERATION
THE QUAYS, BRUNEL WAY
BAGLAN ENERGY PARK SA11 2GG
www.npt.gov.uk

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Drawing Title

File No.		Property Ref. No.			
Drawn		Checked		Approved	
Date		Date		Date	
Scales					

Drawing No. A2 Rev.

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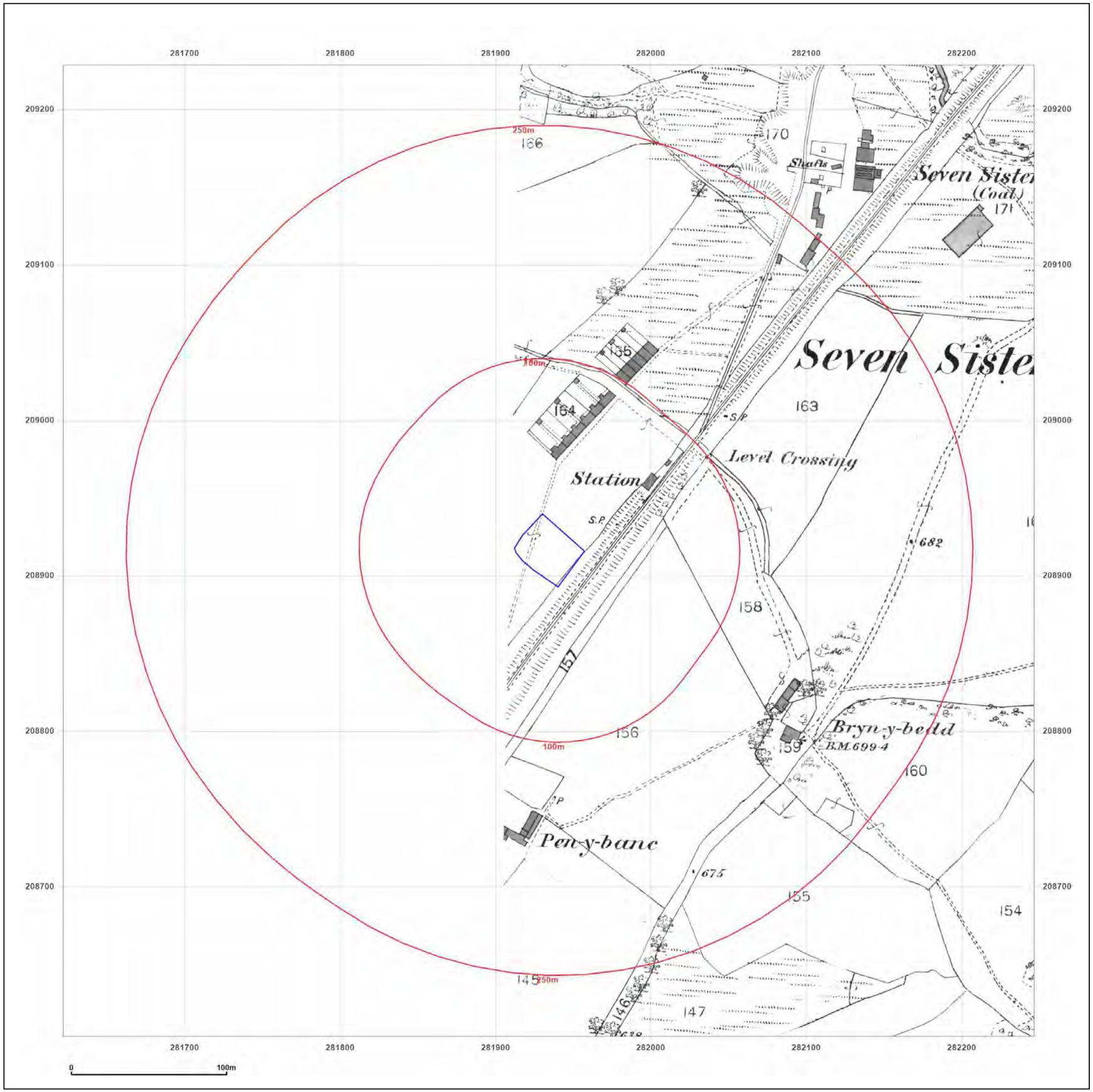
APPENDIX B

HISTORICAL ORDNANCE SURVEY MAP EXTRACTS

Scale 1:2500 Historical Maps	1877, 1877-1879, 1899-1904, 1918, 1961-1962, 1987-1989, 1993 and 1988-1993
Scale 1:1,250 Historical Maps	2003
Scale 1:10,560 Historical Maps	1876-1877, 1877, 1901, 1903, 1913-1914, 1921, 1948, 1964-1965 and 1987-1988
Scale 1:10,000 Historical Maps	2001, 2010 and 2021



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SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1877**

Scale: 1:2,500

Printed at: 1:2,500

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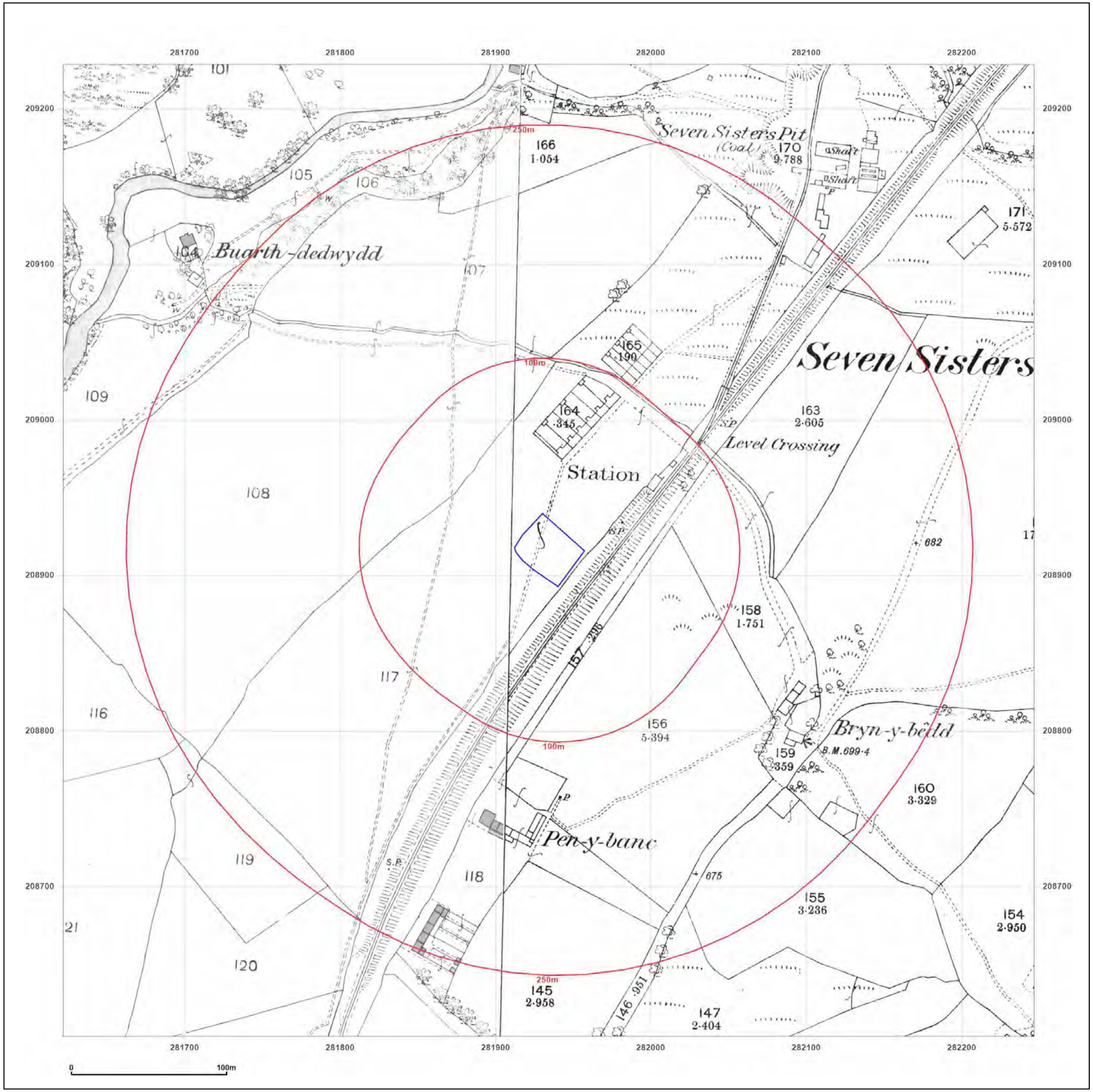

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Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1877-1879**

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Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1899-1904**

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Map Name: County Series

Map date: **1904**

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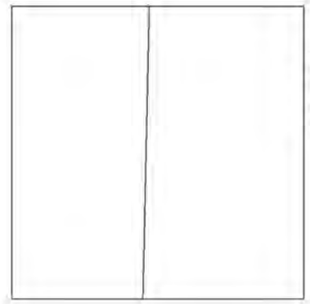

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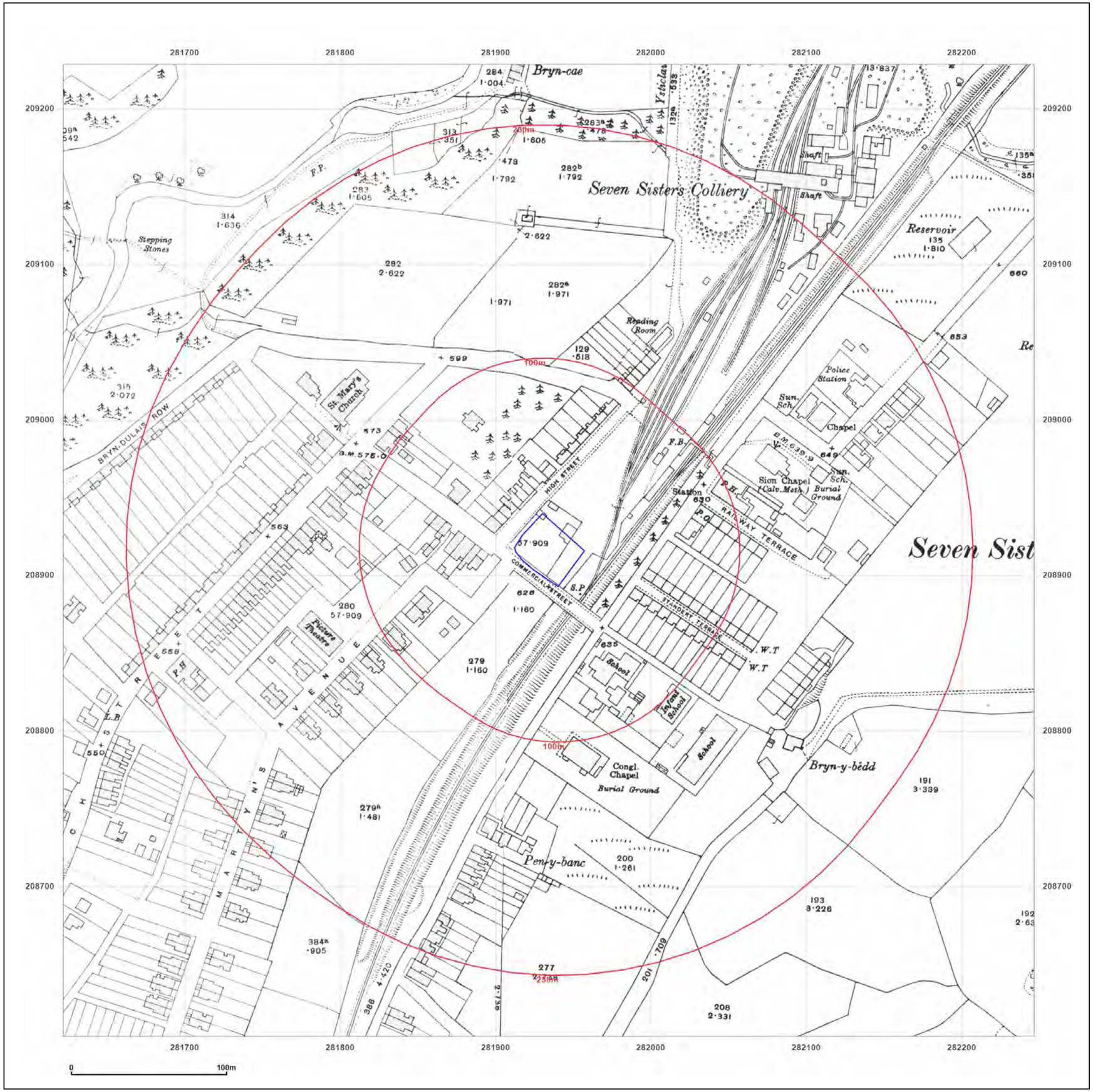

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Map Name: County Series

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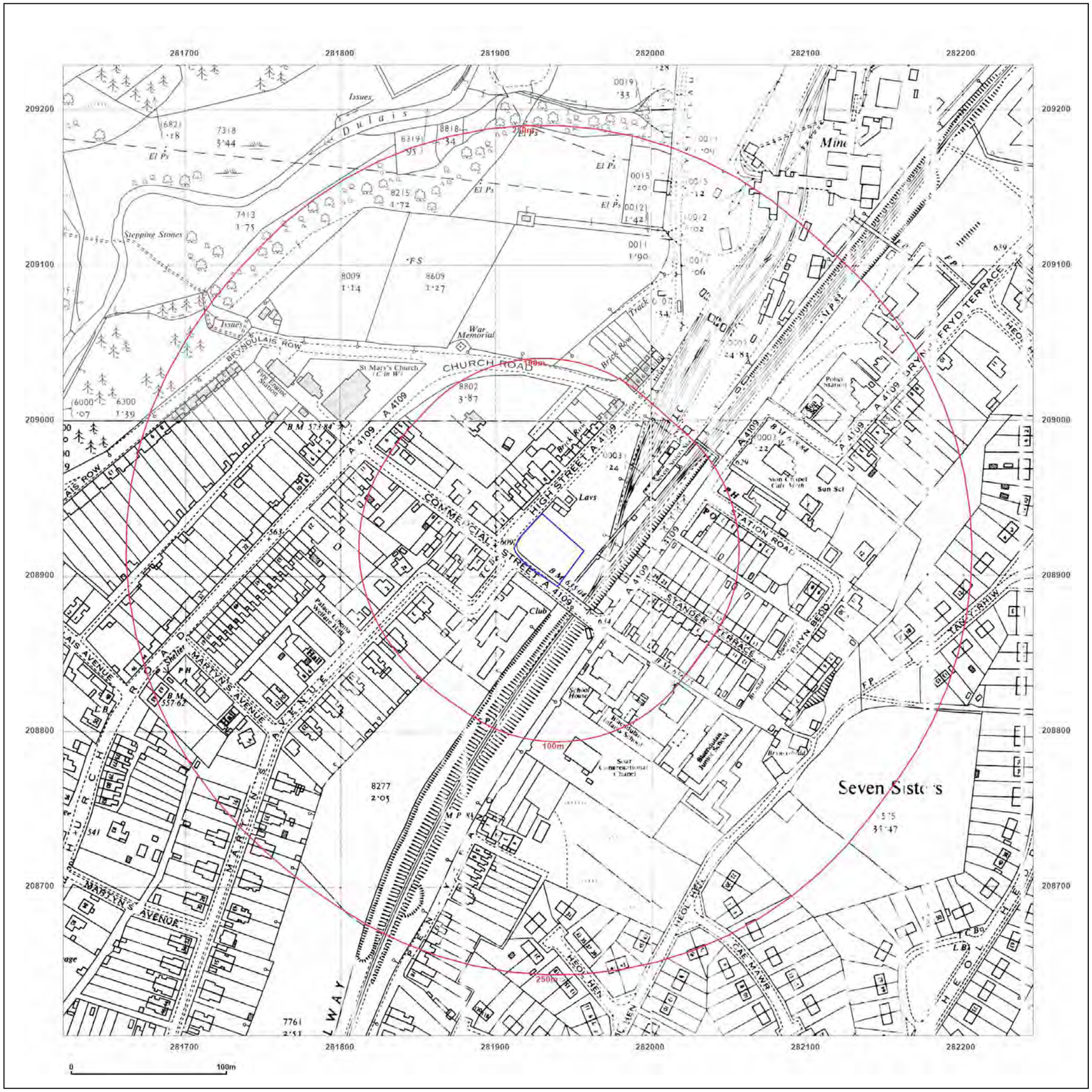

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Report Ref: GS-8293534
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Map Name: National Grid

Map date: **1961-1962**

Scale: 1:2,500

Printed at: 1:2,500

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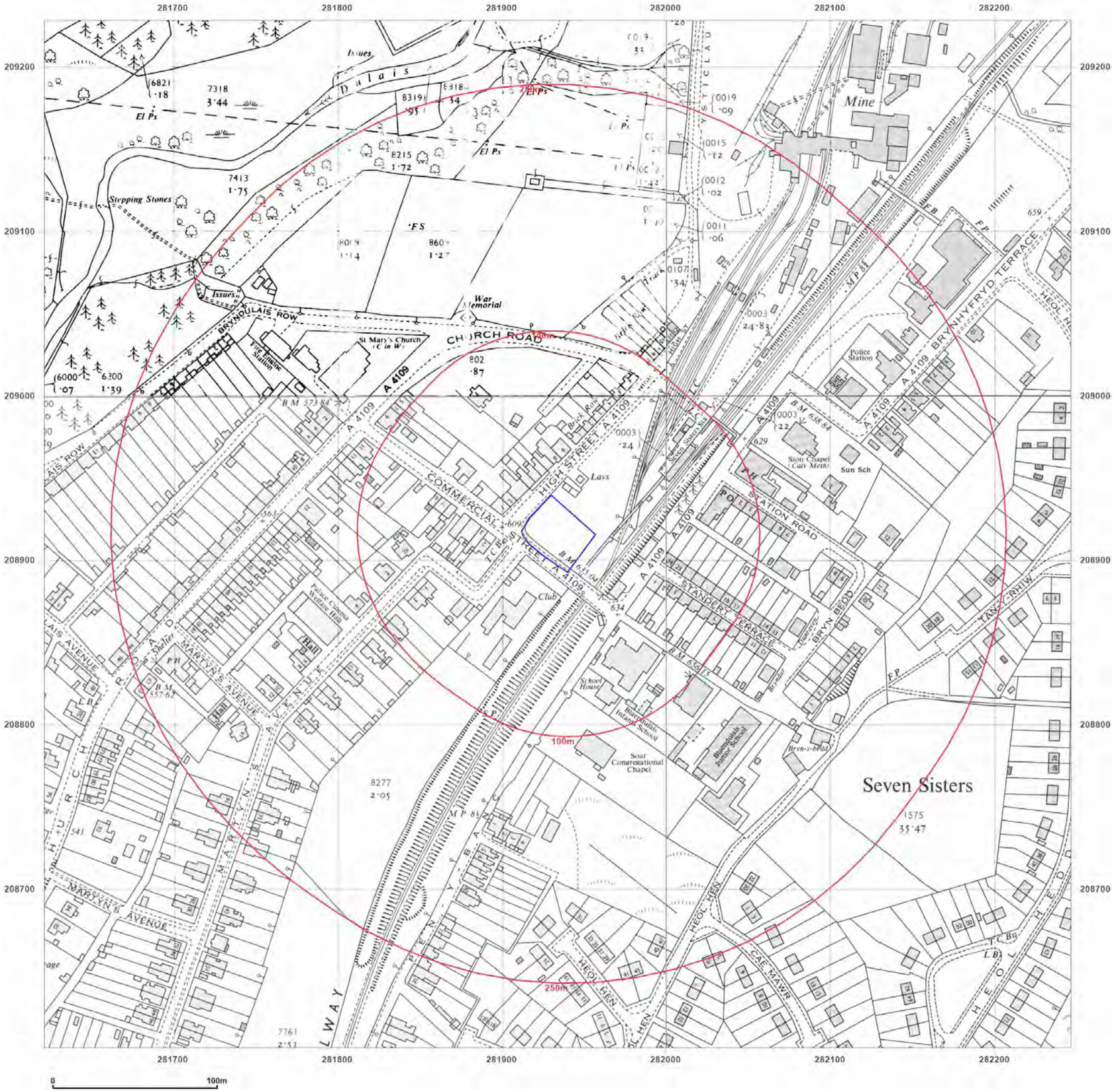

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Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: **1962**

Scale: 1:2,500

Printed at: 1:2,500

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Map Name: National Grid

Map date: **1987-1989**

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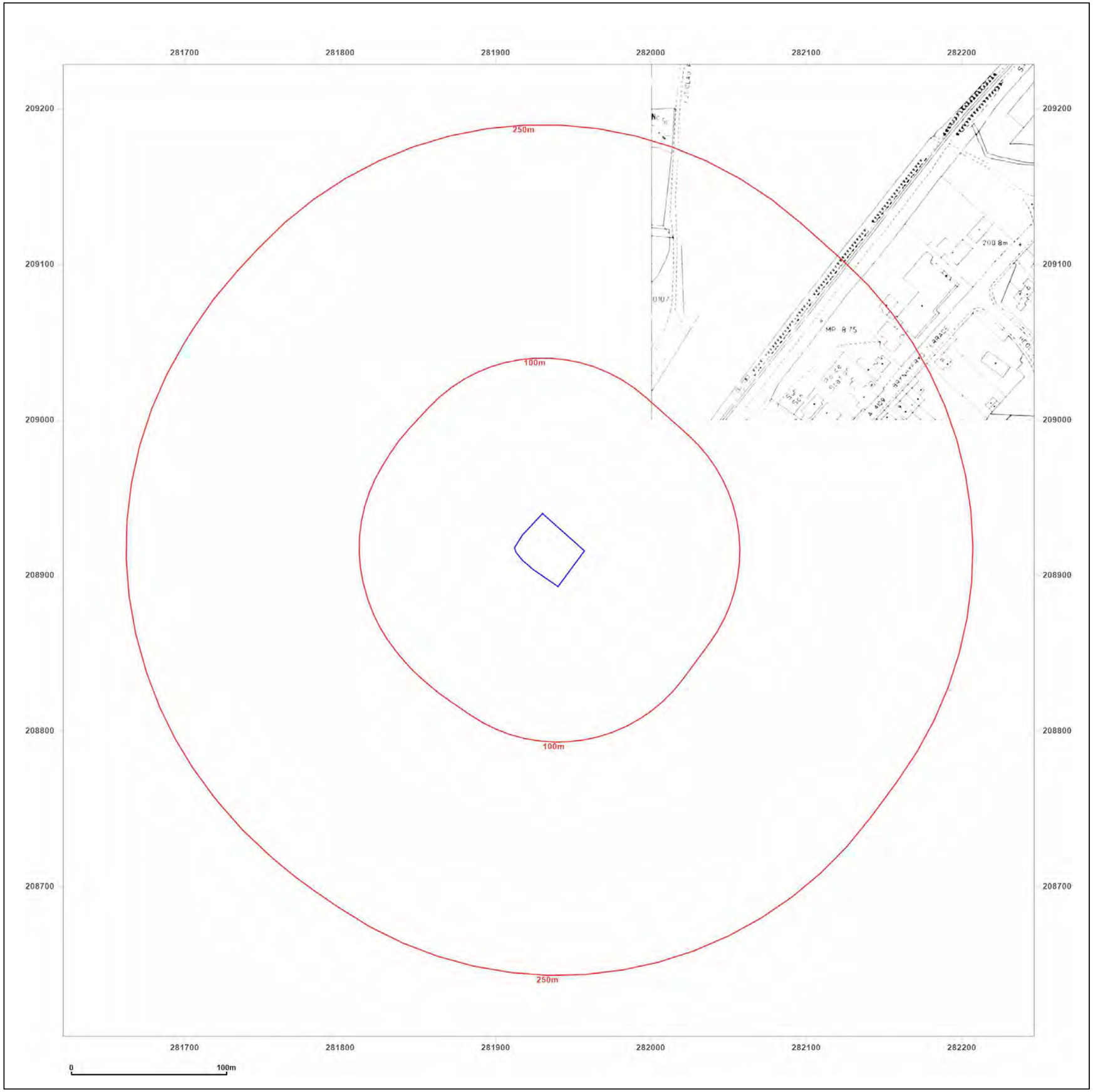

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Report Ref: GS-8293534
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Map date: **1993**

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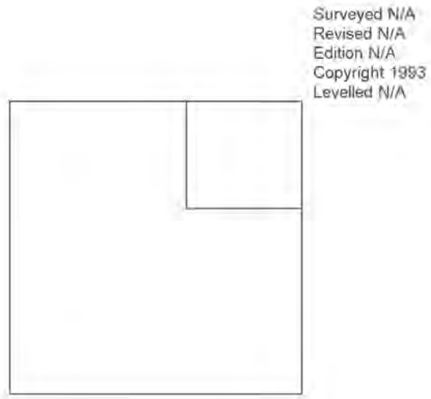

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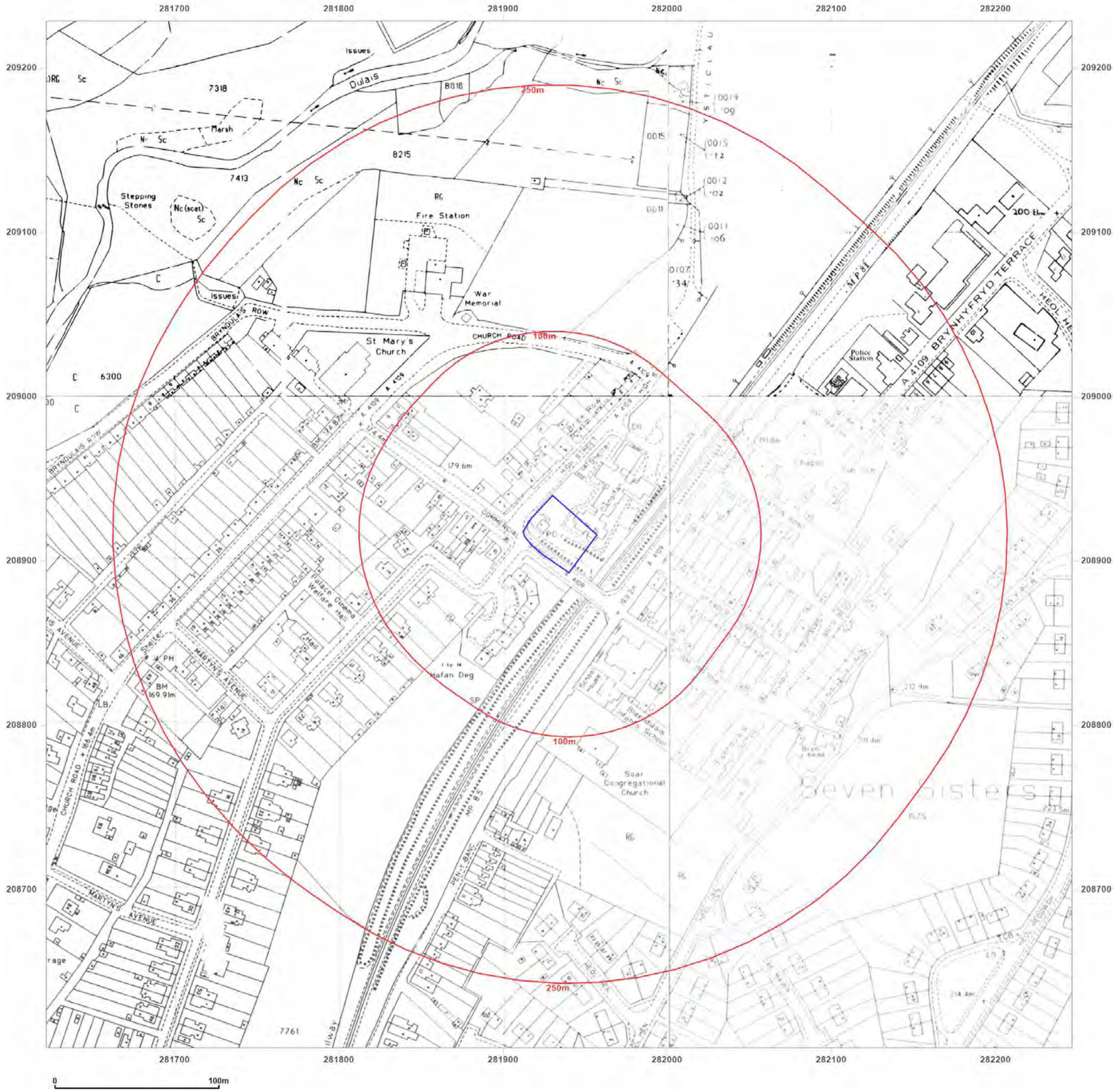

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Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Levelled N/A

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Revised 1988
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Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: LandLine

Map date: **2003**

Scale: 1:1,250

Printed at: 1:1,250

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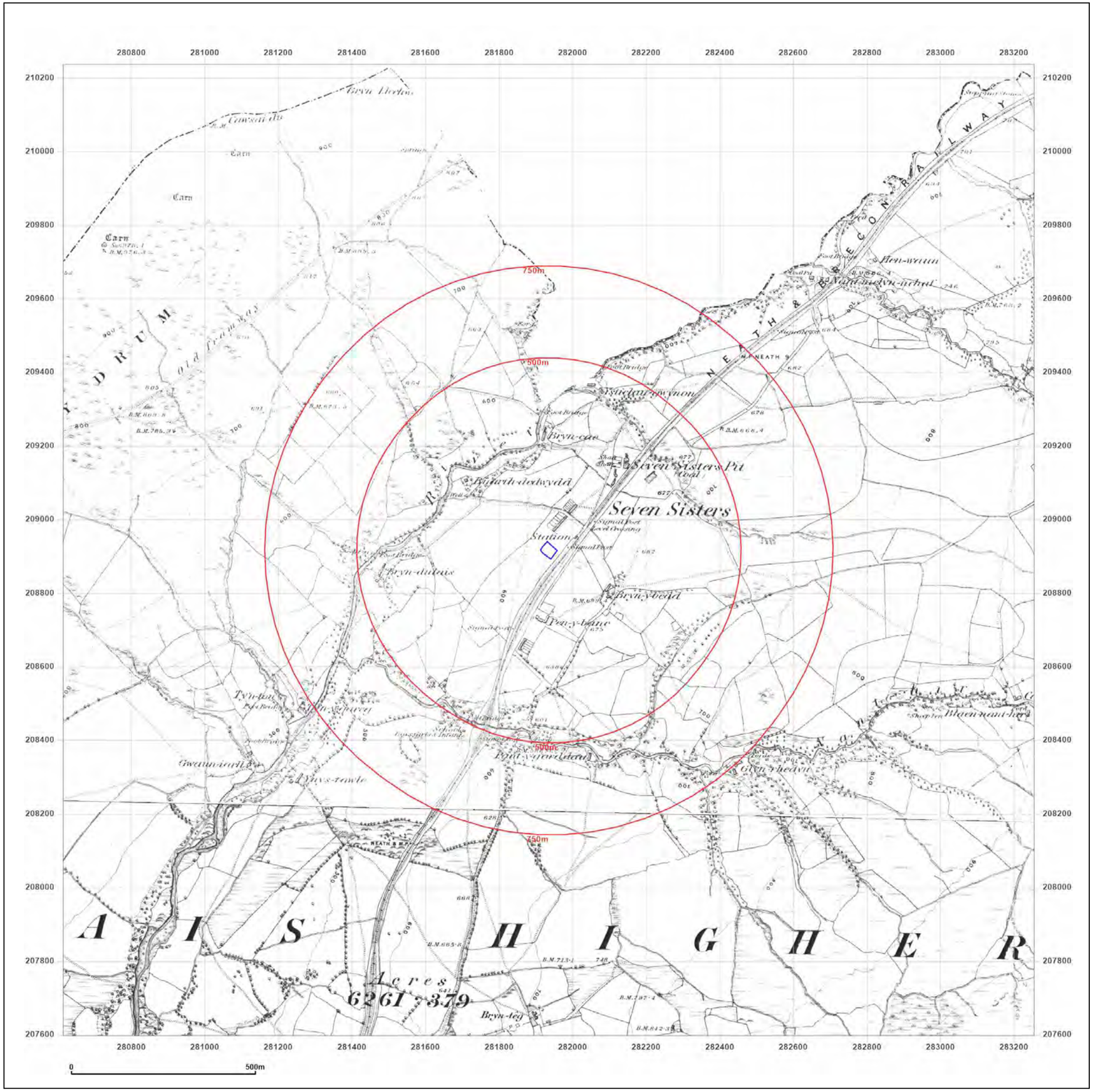

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Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1876-1877**

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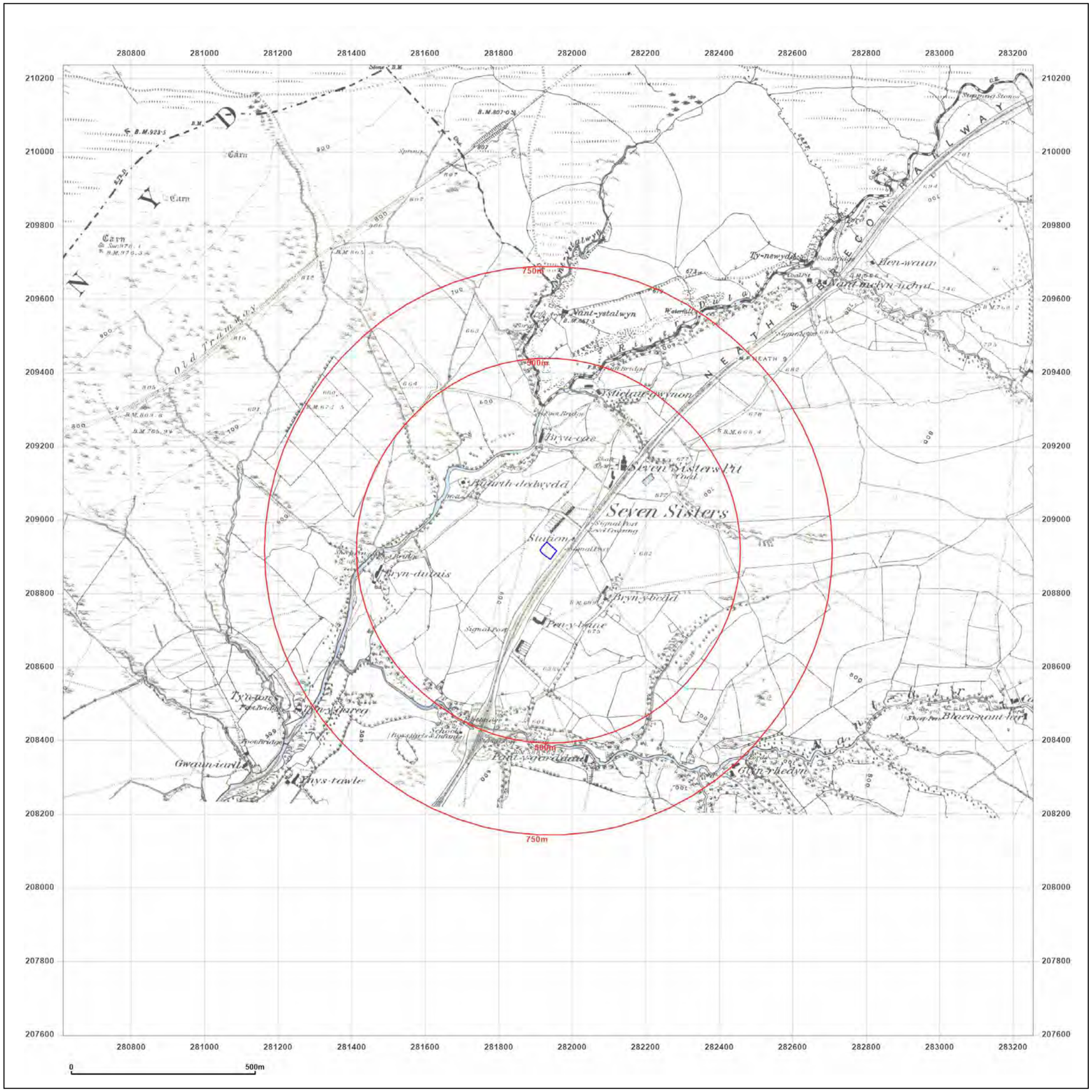

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SA10 9DN

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Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1877**

Scale: 1:10,560

Printed at: 1:10,560

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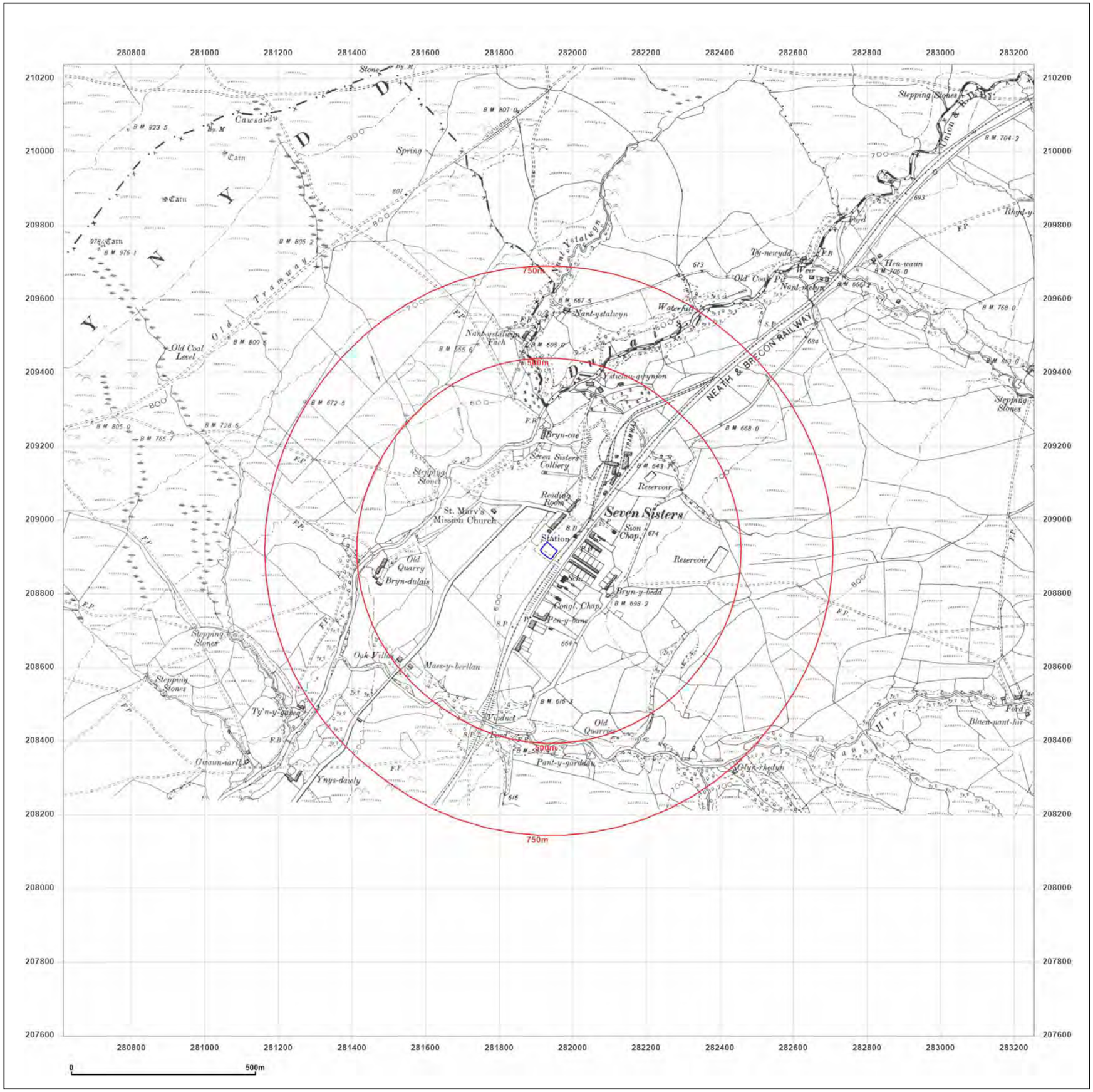

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Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1901**

Scale: 1:10,560

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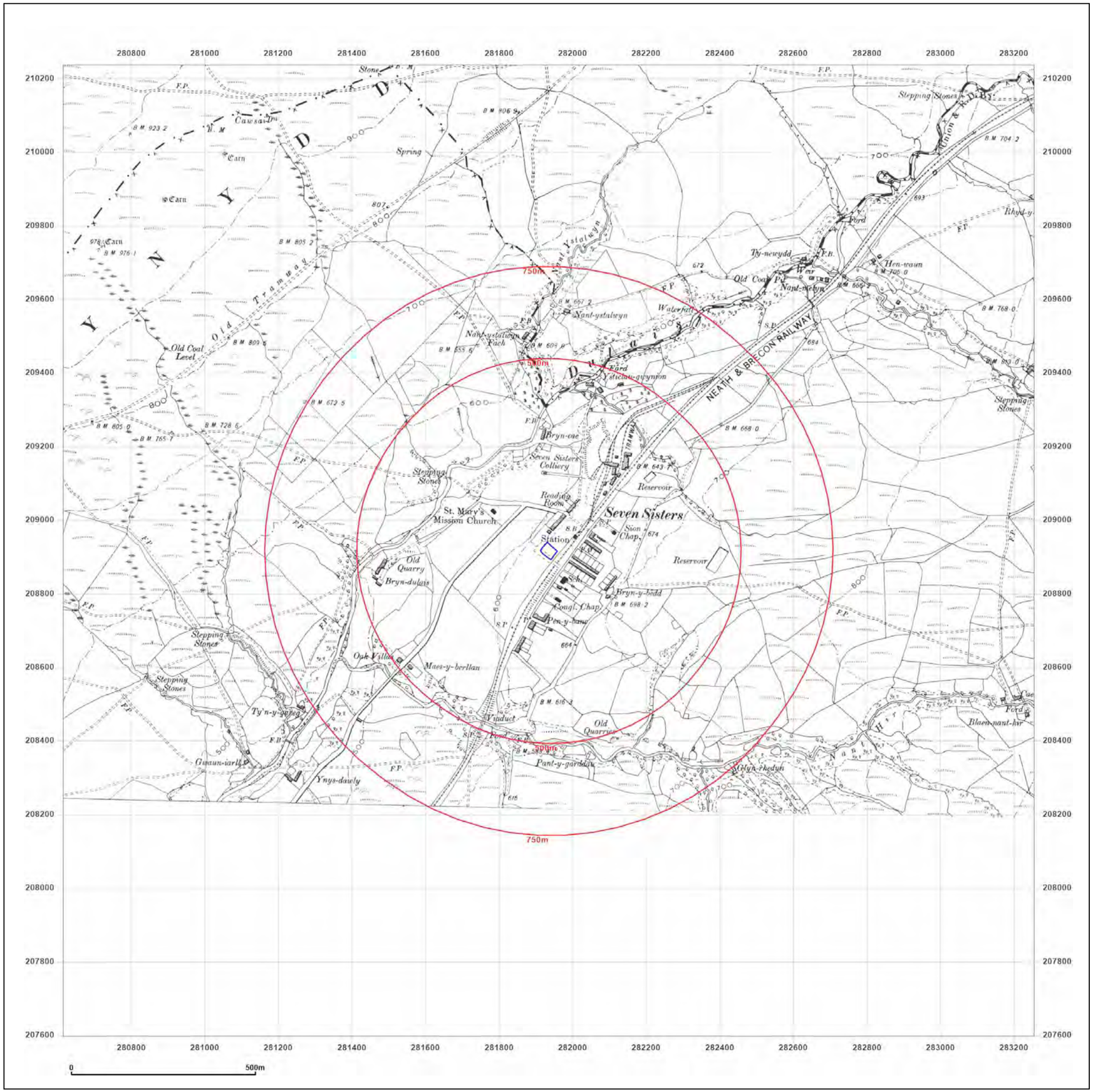

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1903**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
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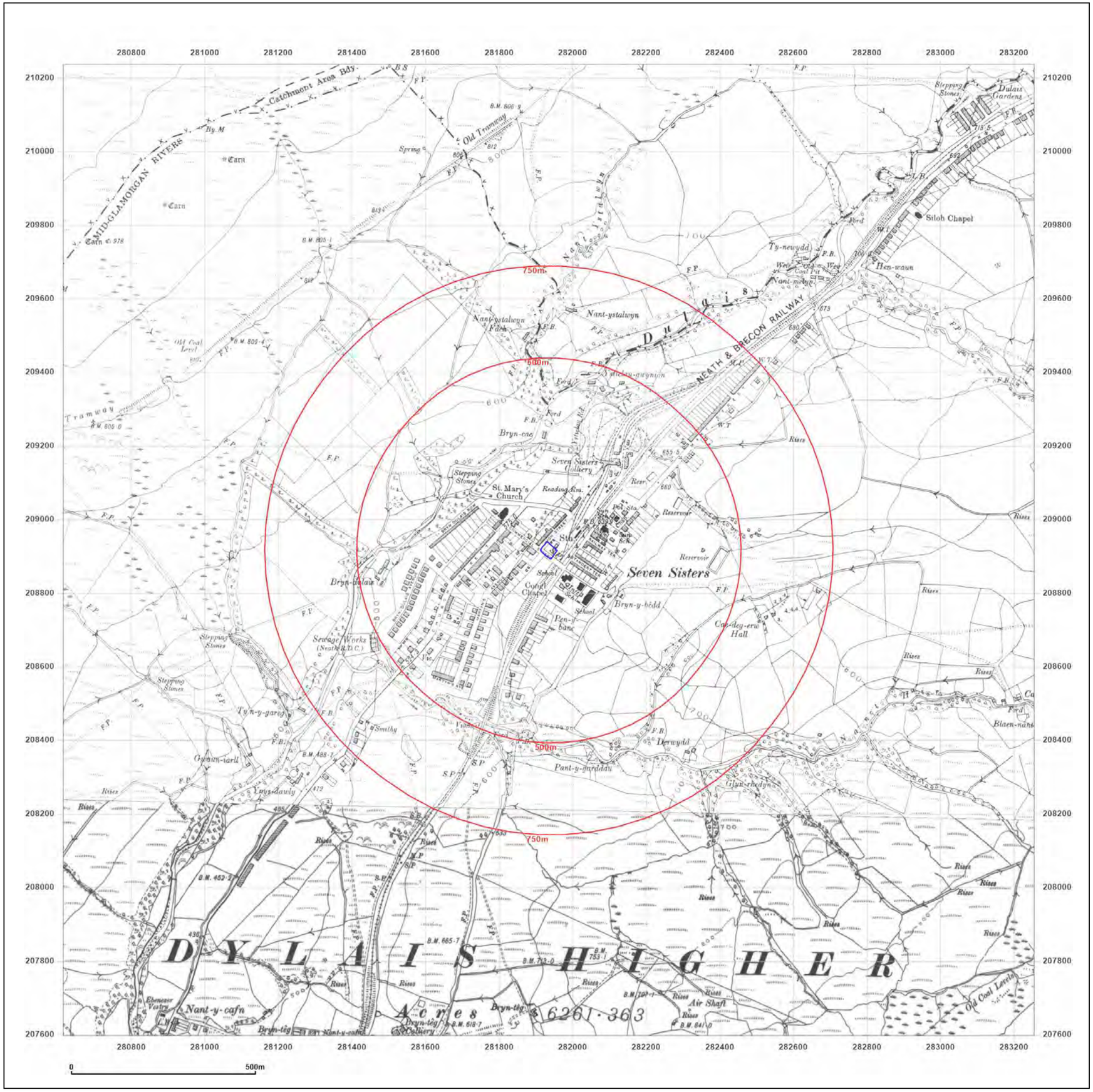

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1913-1914**

Scale: 1:10,560

Printed at: 1:10,560

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~~Revised 1914~~
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Surveyed 1876
Revised 1913
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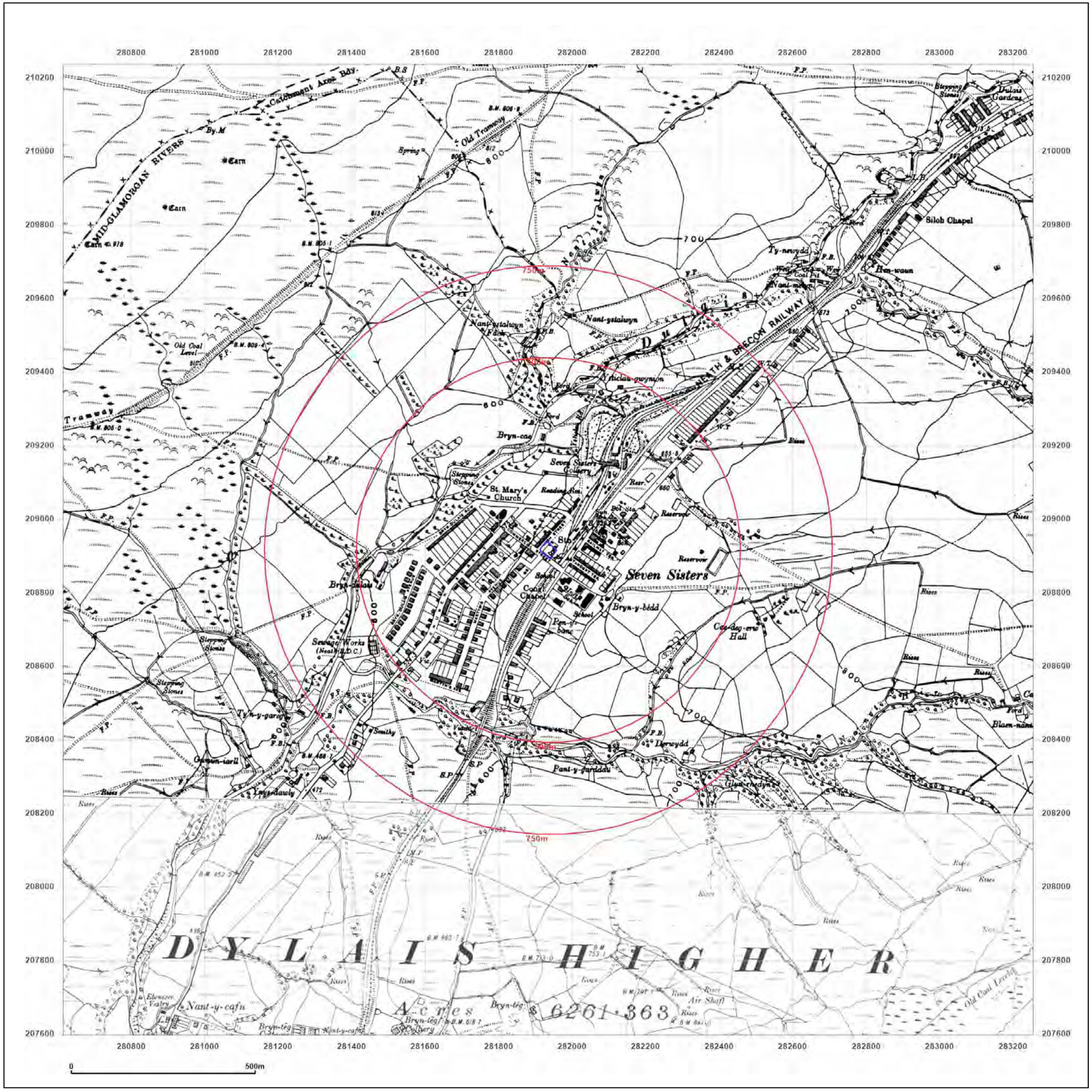

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised N/A
Edition N/A
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Surveyed 1877
Revised 1921
Edition N/A
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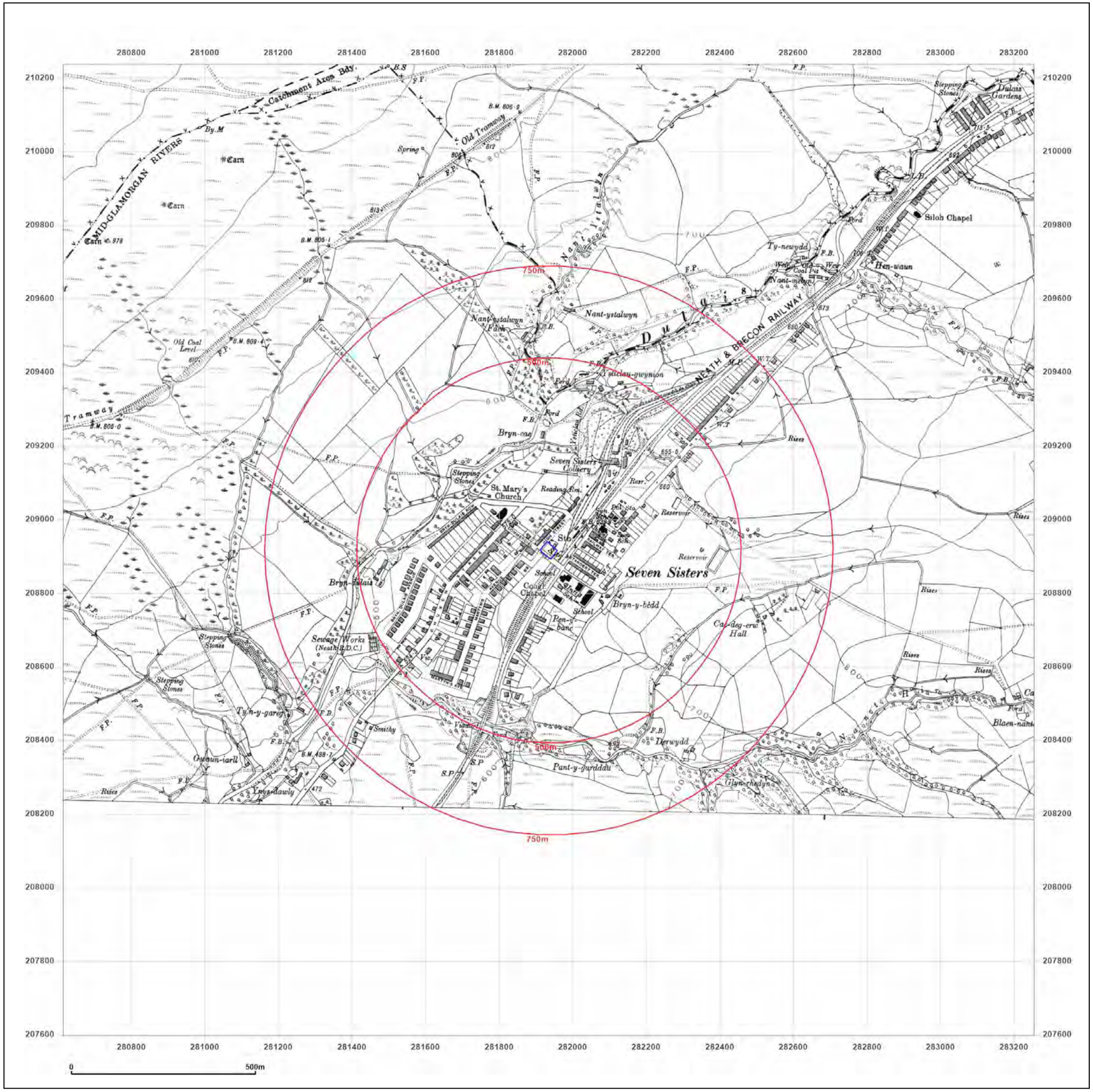
750m
500m
Seven Sisters
NEATH & BRECON RAILWAY
Siloh Chapel
St. Mary's Church
Seven Sisters Colliery
Reservoir
Stepping Stones
Old Tramway
Tramway
Old Coal Level
Sewage Works (Neath R.D.C.)
Smithy
Derwydd
Pant-y-gurddu
Bryn-y-bedd
Bryn-ffalais
Tyn-y-gareg
Ty-newydd
Hen-waun
Nant-ystalwyn
Bryn-cae
Rises
Carn
Spring
Catchment Area Bdy.
MID-GLAMORGAN RIVERS
Ford
Dulais Gardens
School
Court
Chapel
Hall
Pen-y-banc
Glyn-rhedyn
Blaen-nant
Gwaun-tarll
Lwis-dawly
Nant-y-cwm
Coal Pit
Weir
Old Coal Level
Stepping Stones
Reading Rm.
Rear
Pell Sta.
Bank
Sub Sta.
Vicarage
Vicar's Rd.
Nant-ystalwyn Park
Nant-y-cwm
Nant-y-ffalwyn
Cae-deg-erw
Ty-isaf-y-gwynion
Bryn-cae
Bryn-ffalais
Tyn-y-gareg
Gwaun-tarll
Lwis-dawly
Blaen-nant
Glyn-rhedyn
Pant-y-gurddu
Derwydd
Bryn-y-bedd
Pen-y-banc
Cae-deg-erw
Hen-waun
Ty-newydd
Nant-y-cwm
Nant-ystalwyn
Nant-y-ffalwyn
Vicarage
Vicar's Rd.
Seven Sisters Colliery
Reservoir
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Old Tramway
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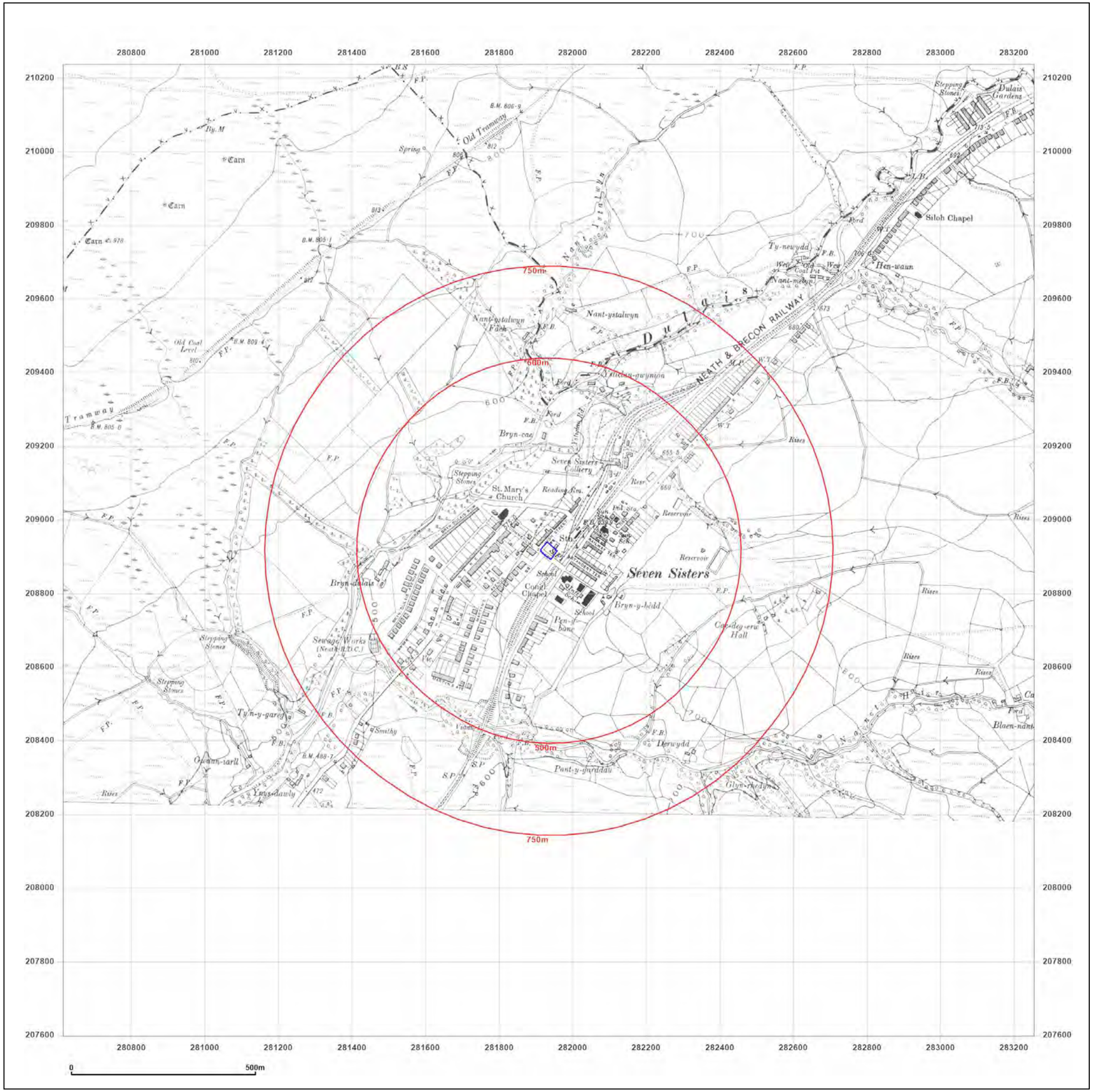
Catchment Area Bdy.
MID-GLAMORGAN RIVERS
Ford
Siloh Chapel
Dulais Gardens
Stepping Stones
Rises
Rises
Rises



Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1921
Edition 1921
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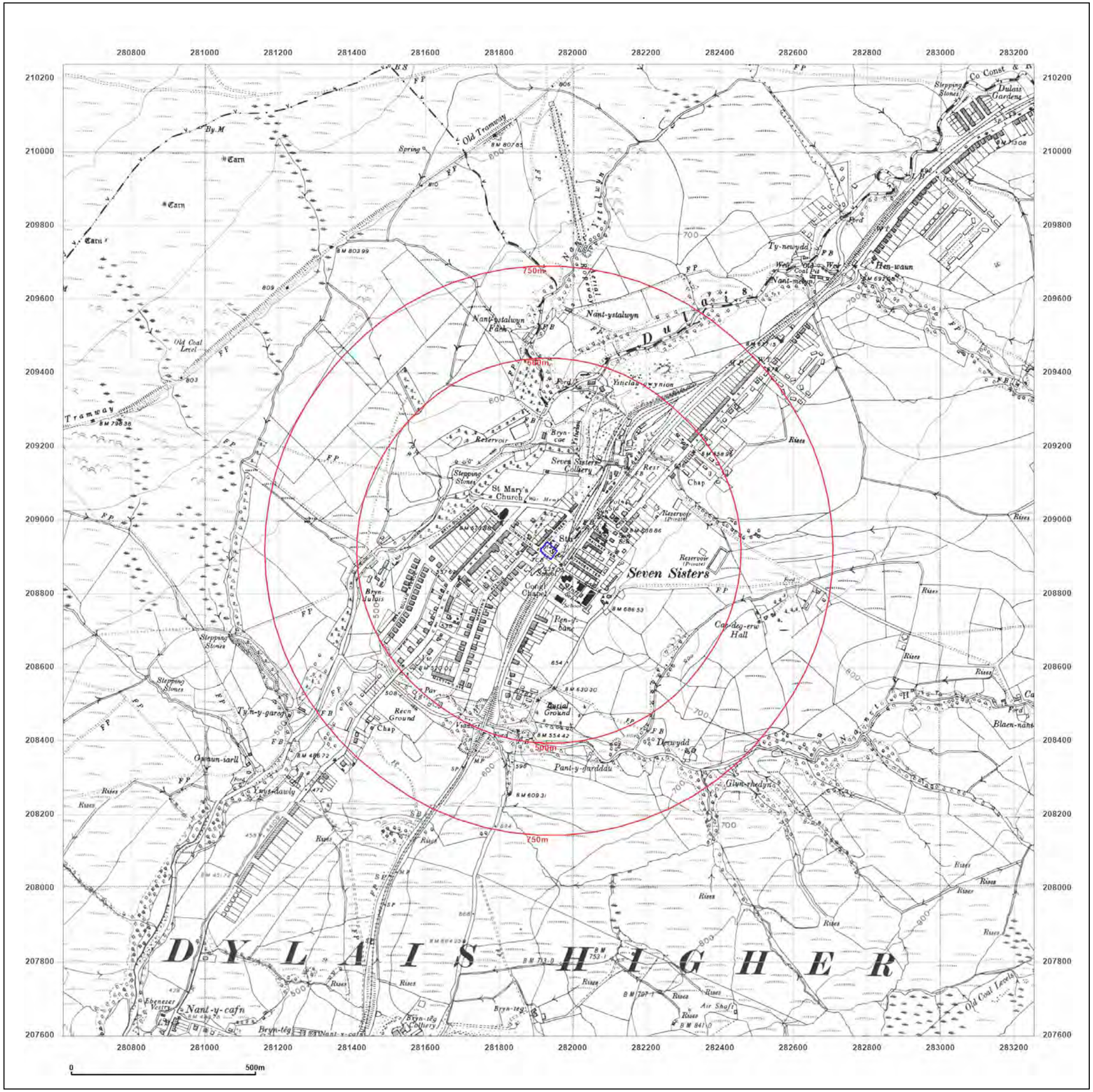

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1948
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Edition N/A
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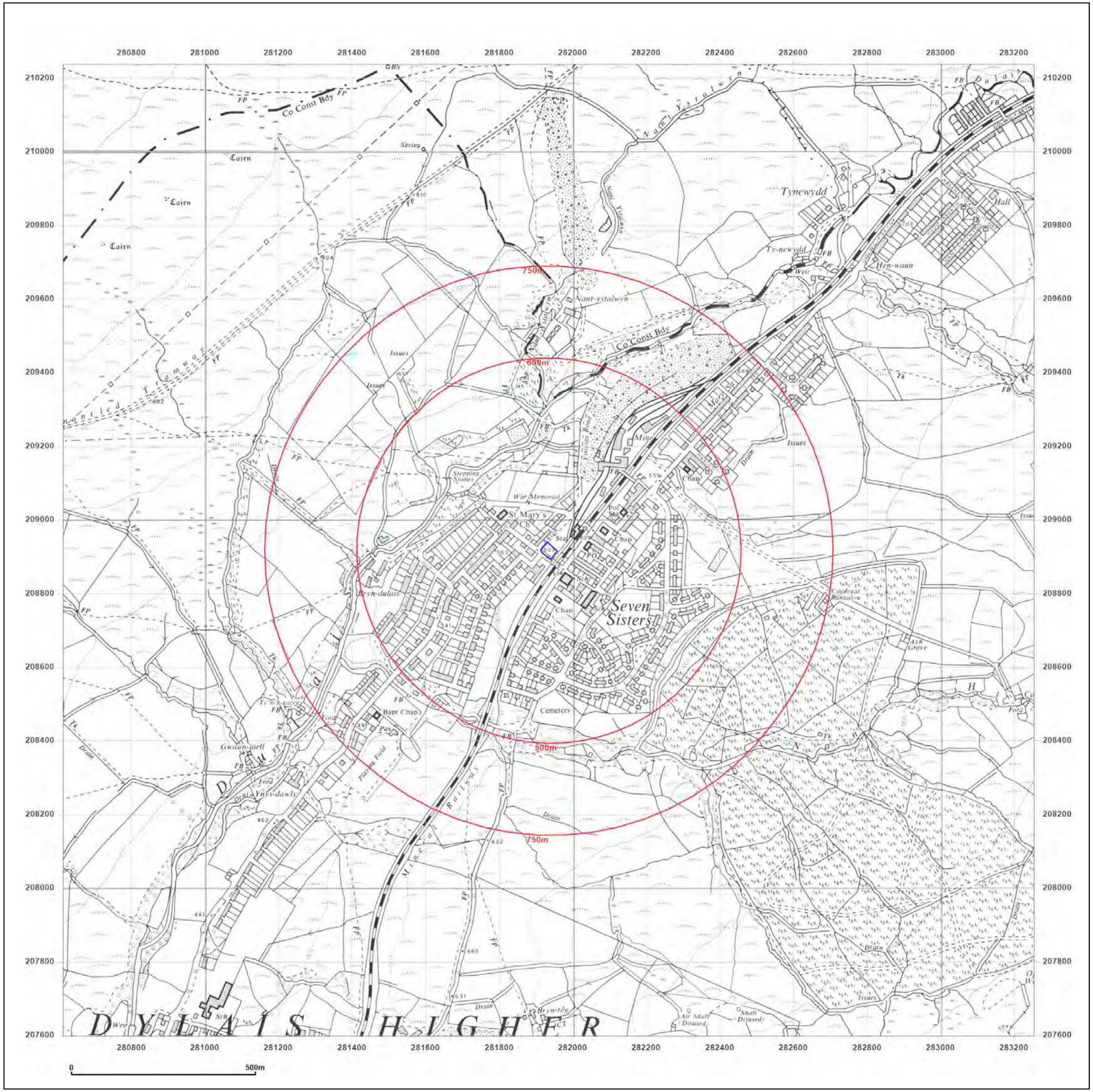

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: Provisional

Map date: **1964-1965**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1965
Edition N/A
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Surveyed 1964
Revised 1964
Edition N/A
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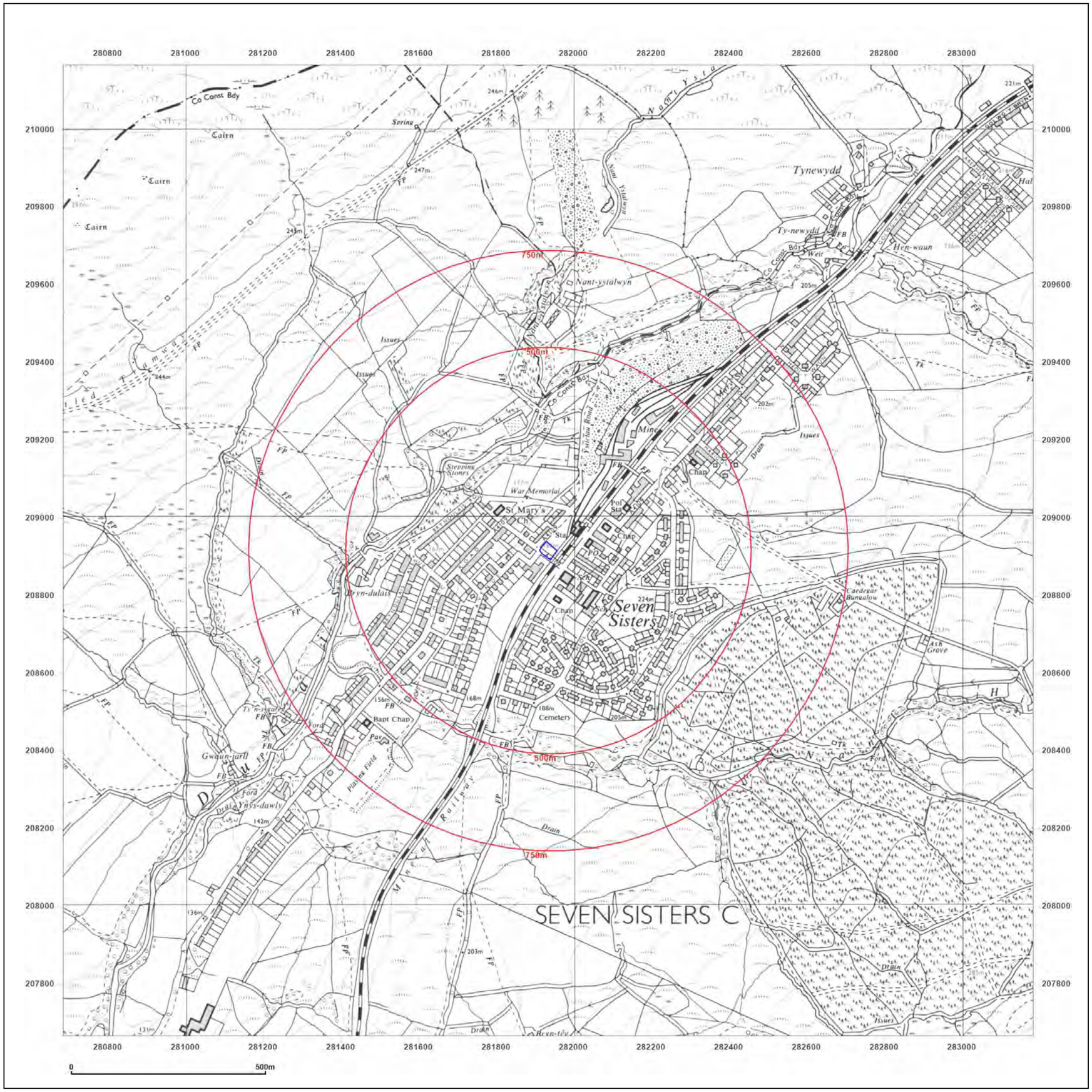

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: **1987-1988**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1962
Revised 1988
Edition N/A
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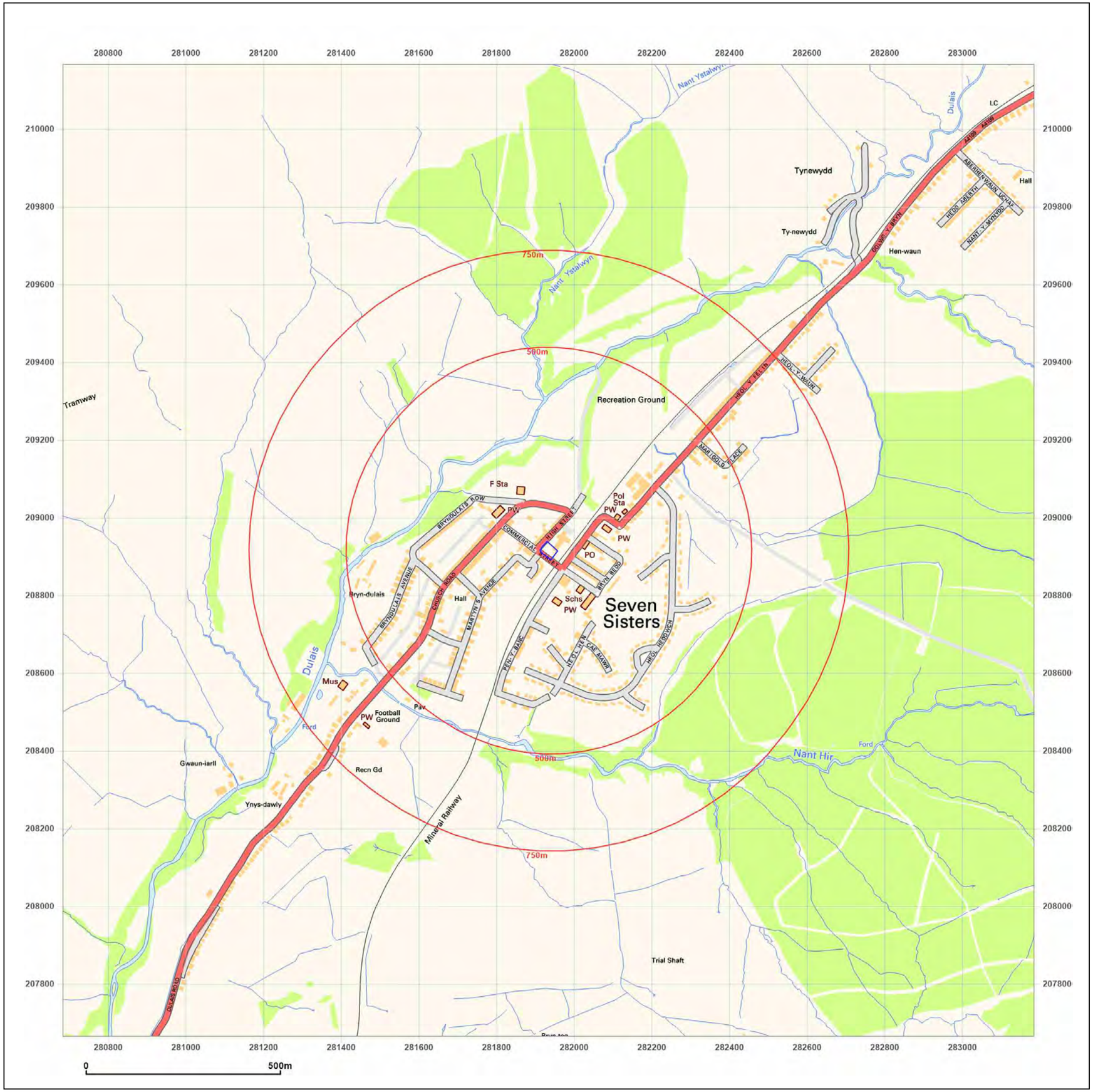

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

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Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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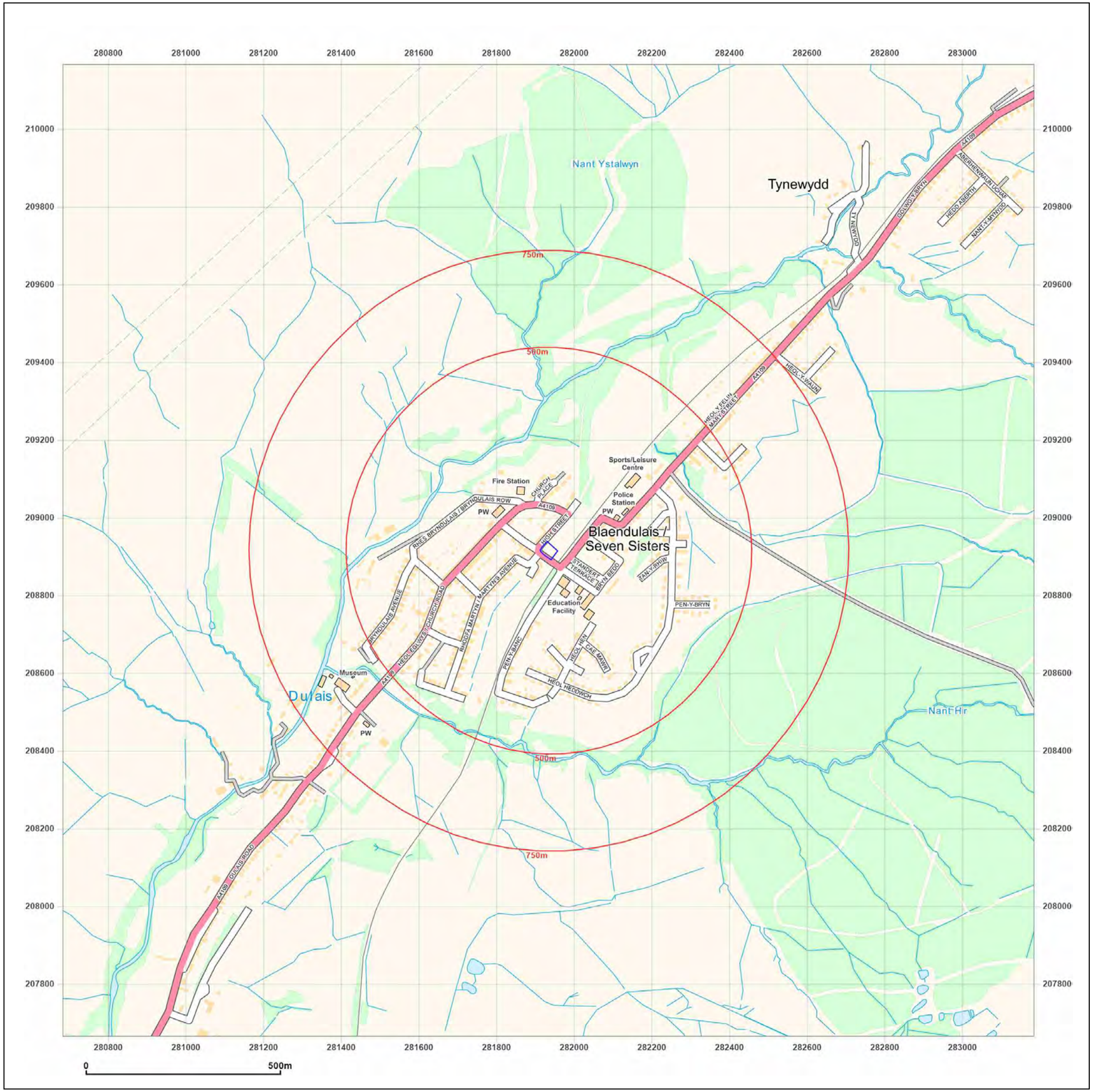

Groundsure INSIGHTS

Site Details:

LIVING ACCOMMODATION, 8,
HIGH STREET, SEVEN SISTERS,
SA10 9DN

Client Ref: H1061-21_Childcare_Unit_Blaendulais
Report Ref: GS-8293534
Grid Ref: 281934, 208916

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

Printed at: 1:10,000

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APPENDIX C
GROUNDSURE ENVIROINSIGHT AND GEOINSIGHT

Groundsure Enviro Insight and Geo Insight Report GS-8293536

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

LIVING ACCOMMODATION, 8, HIGH STREET, SEVEN SISTERS, SA10 9DN

Order Details

Date: 27/10/2021

Your ref: H1061-21_Childcare_Unit_Blaendulais

Our Ref: GS-8293536

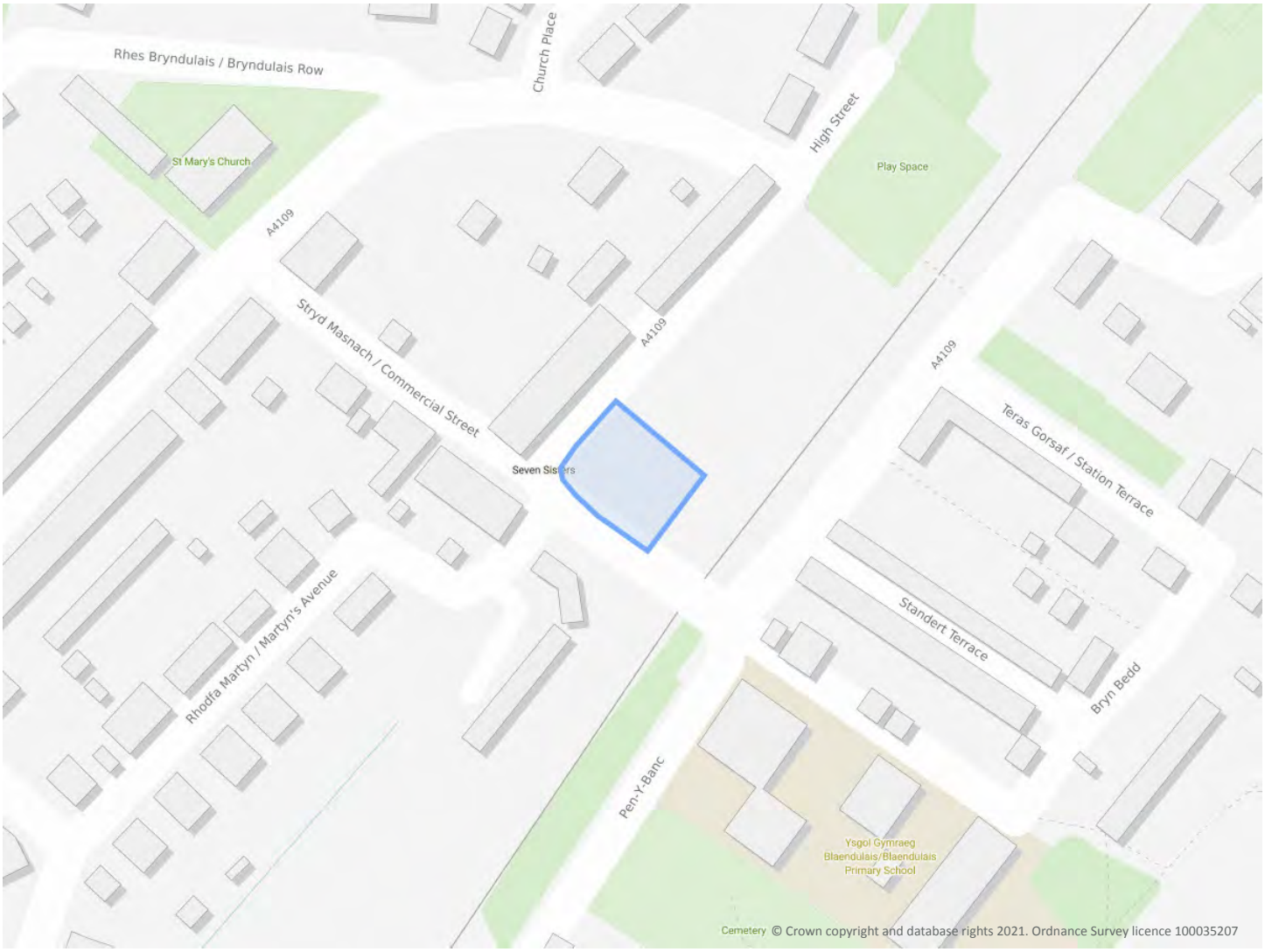
Client: SOCOTEC UK Limited

Site Details

Location: 281924 208915

Area: 0.11 ha

Authority: Castell-nedd Port Talbot - Neath Port Talbot County Borough



Summary of findings p. 2

Aerial image p. 8

OS MasterMap site plan p.13

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info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	**1.1**	**Historical industrial land uses**	2	17	29	18	-
17	**1.2**	**Historical tanks**	0	0	0	1	-
17	1.3	Historical energy features	0	0	0	0	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	**1.5**	**Historical garages**	0	0	0	2	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
19	**2.1**	**Historical industrial land uses**	2	19	49	30	-
23	**2.2**	**Historical tanks**	0	0	0	1	-
24	2.3	Historical energy features	0	0	0	0	-
24	2.4	Historical petrol stations	0	0	0	0	-
24	**2.5**	**Historical garages**	0	0	0	3	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
25	3.1	Active or recent landfill	0	0	0	0	-
25	3.2	Historical landfill (BGS records)	0	0	0	0	-
26	**3.3**	**Historical landfill (LA/mapping records)**	0	0	1	1	-
26	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
27	**3.7**	**Waste exemptions**	0	0	0	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
28	**4.1**	**Recent industrial land uses**	0	0	1	-	-
29	**4.2**	**Current or recent petrol stations**	0	0	1	0	-
29	4.3	Electricity cables	0	0	0	0	-
29	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-

29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
30	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
30	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
31	4.12	Radioactive Substance Authorisations	0	0	0	0	-
31	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.15	Pollutant release to public sewer	0	0	0	0	-
32	4.16	List 1 Dangerous Substances	0	0	0	0	-
32	4.17	List 2 Dangerous Substances	0	0	0	0	-
32	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	3	13	-
34	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
36	**5.1**	**Superficial aquifer**	Identified (within 500m)				
38	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
39	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
40	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
40	5.5	Groundwater vulnerability- local information	None (within 0m)				
41	5.6	Groundwater abstractions	0	0	0	0	0
42	**5.7**	**Surface water abstractions**	0	0	0	0	2
42	5.8	Potable abstractions	0	0	0	0	0
43	5.9	Source Protection Zones	0	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
44	**6.1**	**Water Network (OS MasterMap)**	0	0	4	-	-

45	**6.2**	**Surface water features**	0	0	3	-	-
45	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
46	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
46	**6.5**	**WFD Groundwater bodies**	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	None (within 50m)				
49	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
50	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding					
51	**9.1**	**Groundwater flooding**	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
52	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
53	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
53	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
53	10.4	Special Protection Areas (SPA)	0	0	0	0	0
53	10.5	National Nature Reserves (NNR)	0	0	0	0	0
54	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
54	**10.7**	**Designated Ancient Woodland**	0	0	1	2	10
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
55	10.10	Marine Conservation Zones	0	0	0	0	0
55	10.11	Green Belt	0	0	0	0	0
55	10.12	Proposed Ramsar sites	0	0	0	0	0

56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
56	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
56	10.15	Nitrate Sensitive Areas	0	0	0	0	0
56	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
57	10.17	SSSI Impact Risk Zones	0	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
59	**11.4**	**Listed Buildings**	0	0	1	-	-
60	11.5	Conservation Areas	0	0	0	-	-
60	11.6	Scheduled Ancient Monuments	0	0	0	-	-
60	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
61	**12.1**	**Agricultural Land Classification**	Grade 5 (within 250m)				
62	12.2	Open Access Land	0	0	0	-	-
62	12.3	Tree Felling Licences	0	0	0	-	-
62	12.4	Environmental Stewardship Schemes	0	0	0	-	-
62	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
64	13.1	Priority Habitat Inventory	0	0	0	-	-
64	13.2	Habitat Networks	0	0	0	-	-
64	13.3	Open Mosaic Habitat	0	0	0	-	-
64	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
65	**14.1**	**10k Availability**	Identified (within 500m)				
66	14.2	Artificial and made ground (10k)	0	0	0	0	-
67	14.3	Superficial geology (10k)	0	0	0	0	-

67	14.4	Landslip (10k)	0	0	0	0	-
68	14.5	Bedrock geology (10k)	0	0	0	0	-
68	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
69	15.1	50k Availability	Identified (within 500m)				
70	15.2	Artificial and made ground (50k)	0	0	1	1	-
71	15.3	Artificial ground permeability (50k)	0	0	-	-	-
72	15.4	Superficial geology (50k)	0	1	1	1	-
73	15.5	Superficial permeability (50k)	Identified (within 50m)				
73	15.6	Landslip (50k)	0	0	0	0	-
73	15.7	Landslip permeability (50k)	None (within 50m)				
74	15.8	Bedrock geology (50k)	1	0	0	0	-
75	15.9	Bedrock permeability (50k)	Identified (within 50m)				
75	15.10	Bedrock faults and other linear features (50k)	0	0	0	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
76	16.1	BGS Boreholes	0	0	1	-	-
Page	Section	Natural ground subsidence					
77	17.1	Shrink swell clays	Very low (within 50m)				
78	17.2	Running sands	Very low (within 50m)				
80	17.3	Compressible deposits	Negligible (within 50m)				
81	17.4	Collapsible deposits	Very low (within 50m)				
82	17.5	Landslides	Low (within 50m)				
84	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
85	18.1	Natural cavities	0	0	0	0	-
86	18.2	BritPits	0	0	0	2	-
86	18.3	Surface ground workings	1	9	18	-	-
88	18.4	Underground workings	0	0	5	4	5
88	18.5	Historical Mineral Planning Areas	0	0	0	0	-

89	18.6	Non-coal mining	0	0	0	0	0
89	18.7	Mining cavities	0	0	0	0	0
89	18.8	JPB mining areas	None (within 0m)				
89	**18.9**	**Coal mining**	Identified (within 0m)				
90	18.10	Brine areas	None (within 0m)				
90	18.11	Gypsum areas	None (within 0m)				
90	18.12	Tin mining	None (within 0m)				
90	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
91	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
92	**20.1**	**BGS Estimated Background Soil Chemistry**	1	2	-	-	-
92	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
92	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
93	21.1	Underground railways (London)	0	0	0	-	-
93	21.2	Underground railways (Non-London)	0	0	0	-	-
94	21.3	Railway tunnels	0	0	0	-	-
94	**21.4**	**Historical railway and tunnel features**	1	7	15	-	-
95	21.5	Royal Mail tunnels	0	0	0	-	-
95	21.6	Historical railways	0	0	0	-	-
95	**21.7**	**Railways**	0	3	2	-	-
96	21.8	Crossrail 1	0	0	0	0	-
96	21.9	Crossrail 2	0	0	0	0	-
96	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 14/04/2020

Site Area: 0.11ha

Recent site history - 2017 aerial photograph

Capture Date: 17/06/2017

Site Area: 0.11ha

Recent site history - 2013 aerial photograph

Capture Date: 14/07/2013

Site Area: 0.11ha

Recent site history - 2001 aerial photograph

Capture Date: 27/08/2001

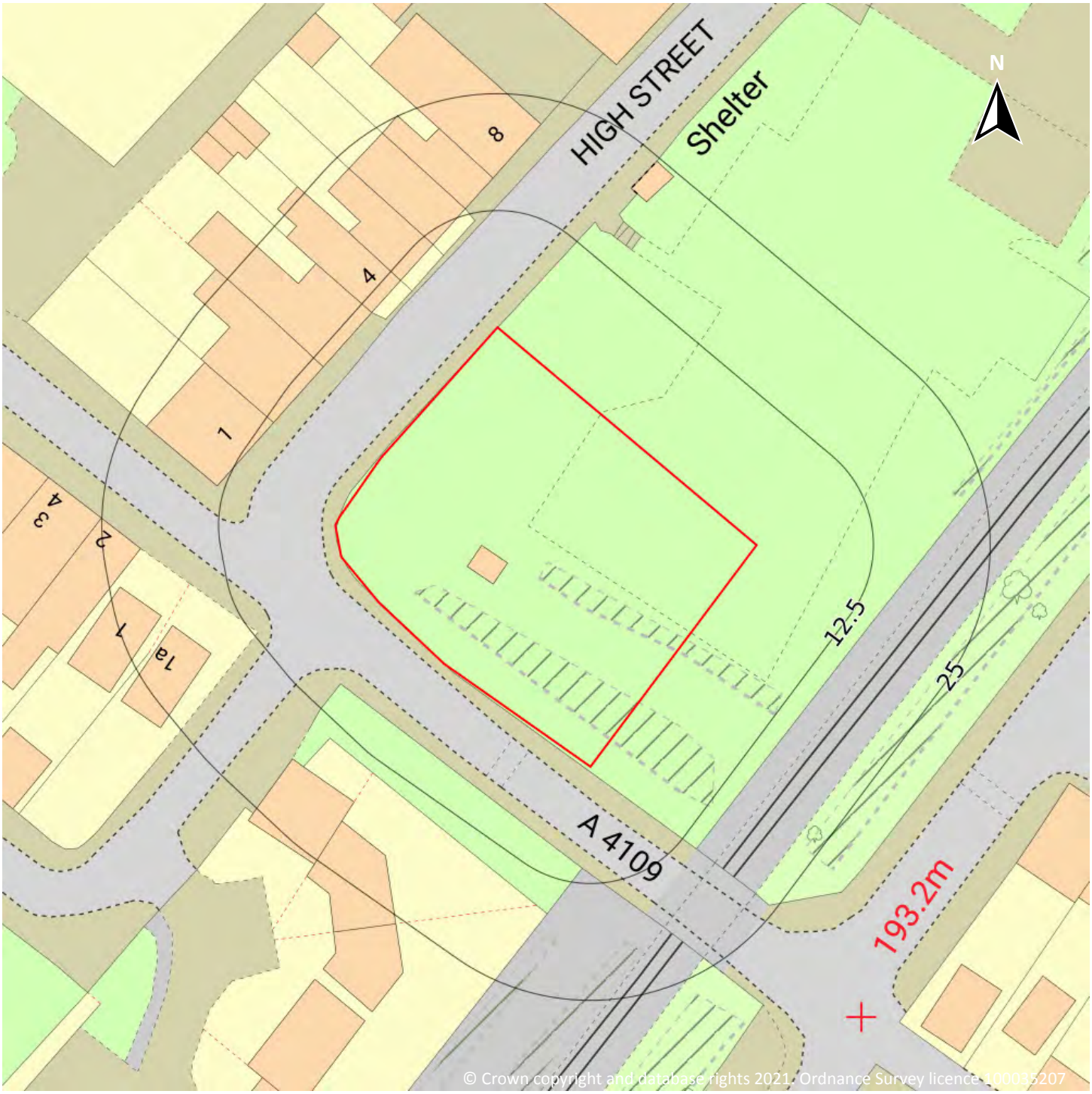
Site Area: 0.11ha

Recent site history - 2000 aerial photograph

Capture Date: 18/06/2000

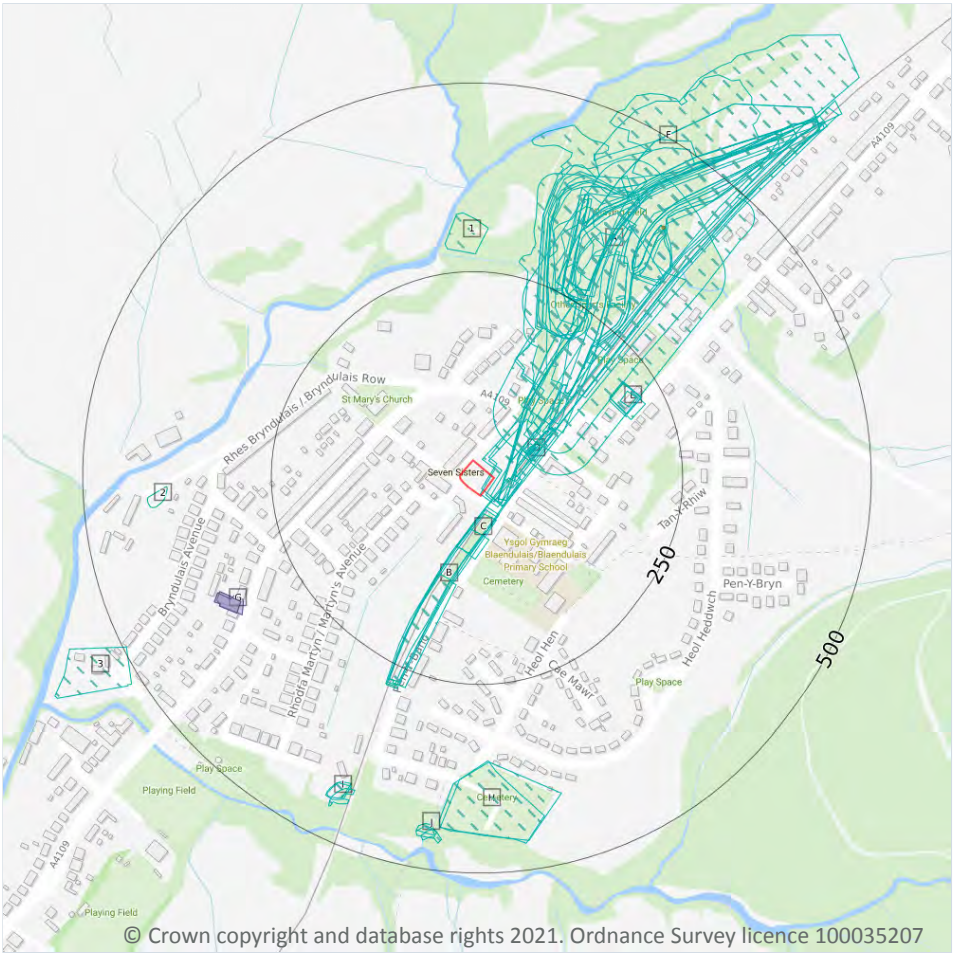
Site Area: 0.11ha

OS MasterMap site plan



Site Area: 0.11ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	66

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Mill Ponds**	**1921**	**270223**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Railway Sidings**	**1921**	**272350**
A	3m SE	Colliery	1914 - 1948	272237
A	9m SE	Railway Sidings	1948	273793
A	13m E	Railway Sidings	1914	275243
A	13m E	Railway Sidings	1914	280847
A	15m E	Railway Sidings	1921	307330
B	15m SE	Cuttings	1877	280954
B	16m SE	Cuttings	1876	302120
B	17m SE	Cuttings	1914 - 1948	296377
C	20m S	Cuttings	1921	297880
B	25m S	Cuttings	1921	281222
D	27m E	Railway Station	1914	299292
D	27m E	Railway Station	1914	311906
D	28m E	Railway Station	1921	316041
A	32m NE	Railway Sidings	1988	280898
A	32m NE	Railway Sidings	1964	292390
C	46m S	Cuttings	1921 - 1948	298789
A	47m NE	Coal Pit	1876	279051
D	53m NE	Railway Station	1877	279311
D	53m NE	Railway Station	1903	296221
D	53m NE	Railway Station	1964 - 1988	316662
D	55m NE	Railway Station	1921 - 1948	294870
D	55m NE	Railway Station	1901	317398
D	56m NE	Railway Station	1921	313777
D	57m NE	Railway Station	1876	294278
A	72m NE	Colliery	1901 - 1903	293946
D	75m NE	Railway Building	1921 - 1948	273484
A	88m NE	Unspecified Mine	1964 - 1988	275866

ID	Location	Land use	Dates present	Group ID
A	89m NE	Railway Sidings	1876 - 1877	284708
A	98m NE	Colliery	1921	283221
A	99m NE	Railway Sidings	1903	313918
A	108m NE	Tramway Sidings	1901 - 1903	315580
B	117m SW	Cuttings	1921	287968
A	147m NE	Railway Sidings	1921	300431
E	184m NE	Police Station	1914 - 1921	276107
E	187m NE	Police Station	1948	284461
E	187m NE	Police Station	1921	290876
E	196m NE	Police Station	1964 - 1988	318244
A	197m NE	Railway Building	1948	256603
A	197m NE	Refuse Heap	1921	285638
F	198m NE	Refuse Heap	1964 - 1988	287032
A	200m NE	Refuse Heap	1921	310941
A	201m NE	Refuse Heap	1921	281268
A	205m NE	Unspecified Heap	1901	260008
A	224m NE	Coal Pit	1877	296543
F	246m NE	Refuse Heaps	1948	269370
A	249m NE	Railway Sidings	1921	316721
A	250m NE	Refuse Heap	1914	289470
A	271m NE	Unspecified Shafts	1877	256178
A	273m NE	Unspecified Shaft	1876	255580
1	273m N	Refuse Heap	1964 - 1988	310802
A	285m NE	Unspecified Shaft	1876 - 1877	310746
A	321m NE	Refuse Heap	1921	284368
A	330m NE	Refuse Heap	1914	312735
H	351m S	Cemetery	1964 - 1988	312771
H	353m S	Burial Ground	1948	264001

ID	Location	Land use	Dates present	Group ID
A	369m NE	Cuttings	1876	269023
2	388m W	Unspecified Old Quarry	1901 - 1903	303809
I	418m SW	Unspecified Pit	1914	303316
I	421m SW	Unspecified Ground Workings	1921	317086
I	424m SW	Unspecified Ground Workings	1921	303638
J	440m S	Unspecified Pit	1948	276529
J	444m S	Unspecified Pit	1921	288968
J	447m S	Unspecified Ground Workings	1921	267263
3	496m SW	Sewage Works	1914 - 1921	294639

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	1

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	396m NE	Unspecified Tank	1962	34162

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	2

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
G	330m SW	Garage	1962 - 1993	6426
G	333m SW	Garage	1987	6014

This data is sourced from Ordnance Survey / Groundsure.

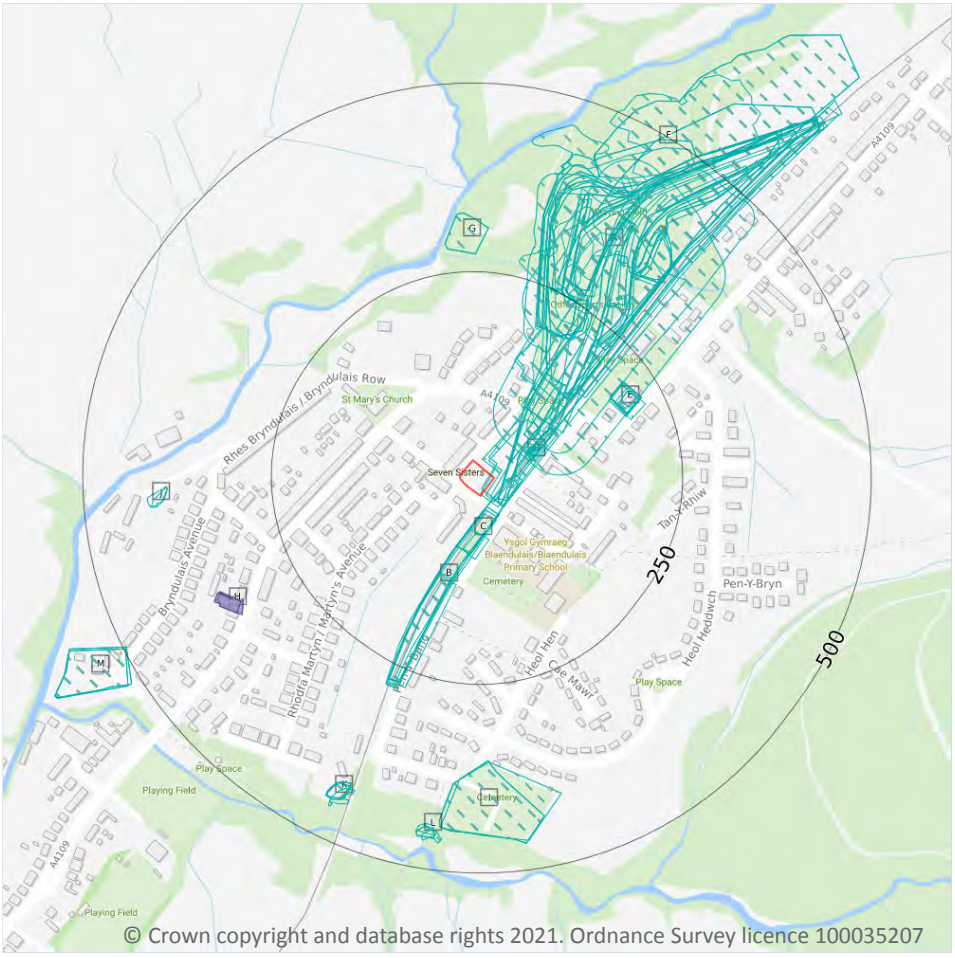
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical garages

2.1 Historical industrial land uses

Records within 500m	100

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Mill Ponds**	**1921**	**270223**
A	**On site**	**Railway Sidings**	**1921**	**272350**
A	3m SE	Colliery	1921	272237

ID	Location	Land Use	Date	Group ID
A	9m SE	Railway Sidings	1948	273793
A	13m E	Railway Sidings	1914	275243
A	13m E	Railway Sidings	1914	280847
A	15m E	Railway Sidings	1921	307330
B	15m SE	Cuttings	1877	280954
B	16m SE	Cuttings	1876	302120
B	17m SE	Cuttings	1914	296377
B	17m SE	Cuttings	1914	296377
C	20m S	Cuttings	1921	297880
B	25m S	Cuttings	1921	281222
D	27m E	Railway Station	1914	311906
D	27m E	Railway Station	1914	299292
D	28m E	Railway Station	1921	316041
A	32m NE	Railway Sidings	1988	280898
A	32m NE	Railway Sidings	1964	292390
C	46m S	Cuttings	1948	298789
A	47m NE	Coal Pit	1876	279051
C	48m S	Cuttings	1921	298789
D	53m NE	Railway Station	1903	296221
D	53m NE	Railway Station	1877	279311
D	53m NE	Railway Station	1988	316662
D	53m NE	Railway Station	1964	316662
D	55m NE	Railway Station	1948	294870
D	55m NE	Railway Station	1901	317398
D	56m NE	Railway Station	1921	313777
D	57m NE	Railway Station	1921	294870
D	57m NE	Railway Station	1876	294278
A	72m NE	Colliery	1903	293946

ID	Location	Land Use	Date	Group ID
D	75m NE	Railway Building	1948	273484
D	76m NE	Railway Building	1921	273484
A	88m NE	Unspecified Mine	1988	275866
A	88m NE	Unspecified Mine	1964	275866
A	89m NE	Railway Sidings	1877	284708
A	98m NE	Colliery	1921	283221
A	98m NE	Colliery	1921	283221
A	99m NE	Railway Sidings	1903	313918
A	104m NE	Railway Sidings	1876	284708
A	108m NE	Tramway Sidings	1901	315580
B	115m SW	Cuttings	1948	296377
B	117m SW	Cuttings	1921	287968
B	120m SW	Cuttings	1921	296377
A	131m NE	Colliery	1948	272237
A	142m NE	Colliery	1901	293946
A	147m NE	Railway Sidings	1921	300431
A	147m NE	Colliery	1914	272237
A	147m NE	Colliery	1914	272237
E	184m NE	Police Station	1921	276107
E	187m NE	Police Station	1948	284461
E	187m NE	Police Station	1921	290876
E	188m NE	Police Station	1921	276107
E	188m NE	Police Station	1914	276107
E	188m NE	Police Station	1914	276107
E	196m NE	Police Station	1988	318244
E	196m NE	Police Station	1964	318244
A	197m NE	Railway Building	1948	256603
A	197m NE	Refuse Heap	1921	285638

ID	Location	Land Use	Date	Group ID
F	198m NE	Refuse Heap	1988	287032
F	198m NE	Refuse Heap	1964	287032
A	200m NE	Refuse Heap	1921	310941
A	201m NE	Refuse Heap	1921	281268
A	201m NE	Refuse Heap	1921	281268
A	205m NE	Unspecified Heap	1901	260008
A	224m NE	Railway Sidings	1921	272350
A	224m NE	Coal Pit	1877	296543
A	227m NE	Tramway Sidings	1903	315580
F	246m NE	Refuse Heaps	1948	269370
A	249m NE	Railway Sidings	1921	316721
A	250m NE	Refuse Heap	1914	289470
A	250m NE	Refuse Heap	1914	289470
A	271m NE	Unspecified Shafts	1877	256178
A	273m NE	Unspecified Shaft	1876	255580
G	273m N	Refuse Heap	1988	310802
G	273m N	Refuse Heap	1964	310802
A	285m NE	Unspecified Shaft	1877	310746
A	289m NE	Unspecified Shaft	1876	310746
A	321m NE	Refuse Heap	1921	284368
A	330m NE	Refuse Heap	1914	312735
A	330m NE	Refuse Heap	1914	312735
I	351m S	Cemetery	1988	312771
I	351m S	Cemetery	1964	312771
I	353m S	Burial Ground	1948	264001
A	369m NE	Cuttings	1876	269023
J	388m W	Unspecified Old Quarry	1901	303809
J	388m W	Unspecified Old Quarry	1903	303809

ID	Location	Land Use	Date	Group ID
K	418m SW	Unspecified Pit	1914	303316
K	418m SW	Unspecified Pit	1914	303316
K	421m SW	Unspecified Ground Workings	1921	317086
K	421m SW	Unspecified Ground Workings	1921	317086
K	424m SW	Unspecified Ground Workings	1921	303638
L	440m S	Unspecified Pit	1948	276529
L	444m S	Unspecified Pit	1921	288968
L	444m S	Unspecified Pit	1921	288968
L	447m S	Unspecified Ground Workings	1921	267263
M	496m SW	Sewage Works	1914	294639
M	496m SW	Sewage Works	1914	294639
M	498m SW	Sewage Works	1921	294639
M	498m SW	Sewage Works	1921	294639

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**1**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
A	396m NE	Unspecified Tank	1962	34162

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	3

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
H	330m SW	Garage	1993	6426
H	330m SW	Garage	1962	6426
H	333m SW	Garage	1987	6014

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	2

Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 25**

ID	Location	Site address	Source	Data type
1	197m NE	Refuse Tip	1962 mapping	Polygon
3	275m N	Refuse Tip	1961 mapping	Polygon

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	1

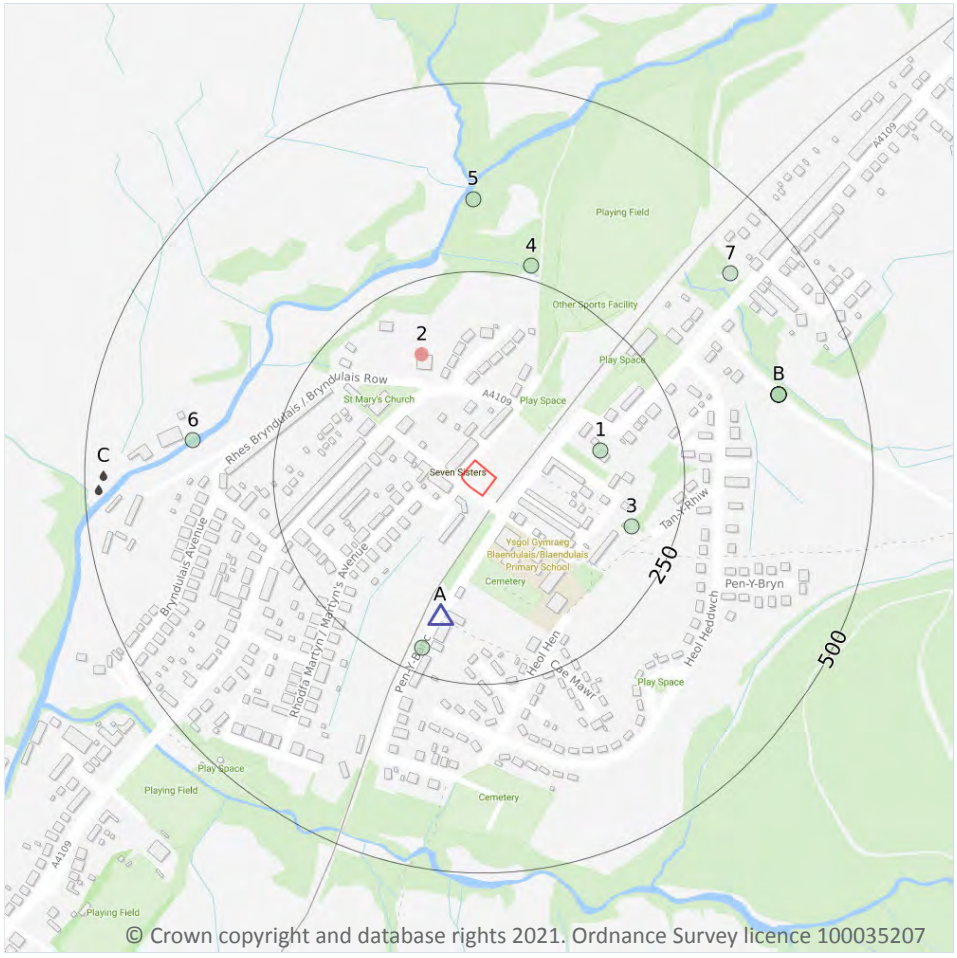
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 25**

ID	Location	Site	Reference	Category	Sub-Category	Description
2	254m W	Land opposite bryndulias row, SA109EB	NRW-WME062807	Using waste exemption	On a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Company	Address	Activity	Category
2	157m NW	Seven Sisters Fire Station	Bryndulais Row, Seven Sisters, Neath, West Glamorgan, SA10 9EA	Fire Brigade Stations	Central and Local Government

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Company	Address	LPG	Status
A	168m S	OBSOLETE	Church Road, Seven Sisters, Neath, Neath Port Talbot, SA10 9DT	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	2

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Address	Details	
C	475m W	BRYNDULAIS (SWO 2A), Bryndulais Farm, SEVEN SISTERS, Neath, SA10 9EE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BW2902901 Permit Version: 2 Receiving Water: RIVER DULAIS	Status: Effective Issue date: 07/10/2019 Effective Date: 07/10/2019 Revocation Date: -
C	482m W	BRYNDULAIS (SWO 2A)	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BW2902901 Permit Version: 1 Receiving Water: RIVER DULAIS	Status: Effective Issue date: 17/06/1963 Effective Date: 17/06/1963 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	16

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Details	
1	143m E	Incident Date: 03/01/2014 Incident Identification: 1189750 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
3	190m E	Incident Date: 13/02/2003 Incident Identification: 136726 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

ID	Location	Details	
A	216m S	Incident Date: 18/10/2002 Incident Identification: 115533 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
4	267m N	Incident Date: 12/06/2007 Incident Identification: 502566 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5	346m N	Incident Date: 18/05/2001 Incident Identification: 5961 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6	359m W	Incident Date: 11/06/2007 Incident Identification: 502089 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	390m E	Incident Date: 06/04/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Specific Waste Materials Specific Waste Materials Specific Waste Materials Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes Asbestos Commercial Waste Household Waste Tyres Vehicles and Vehicle Parts	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 06/04/2001 Incident Identification: 7402 Pollutant: Inert Materials and Wastes : Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes :Asbestos :Commercial Waste :Household Waste :Tyres :Vehicles and Vehicle Parts	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)

ID	Location	Details	
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Pollutant Description: Vehicles and Vehicle Parts	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Pollutant Description: Tyres	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
B	390m E	Incident Date: 04/06/2001 Incident Identification: 7402 Pollutant: Inert Materials and Wastes:Specific Waste Materials:Specific Waste Materials:Specific Waste Materials:Specific Waste Materials:Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes:Asbestos:Commercial Waste:Household Waste:Tyres:Vehicles and Vehicle Parts	Water Impact: Category 2 (Significant) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
7	412m NE	Incident Date: 06/05/2015 Incident Identification: 1334992 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

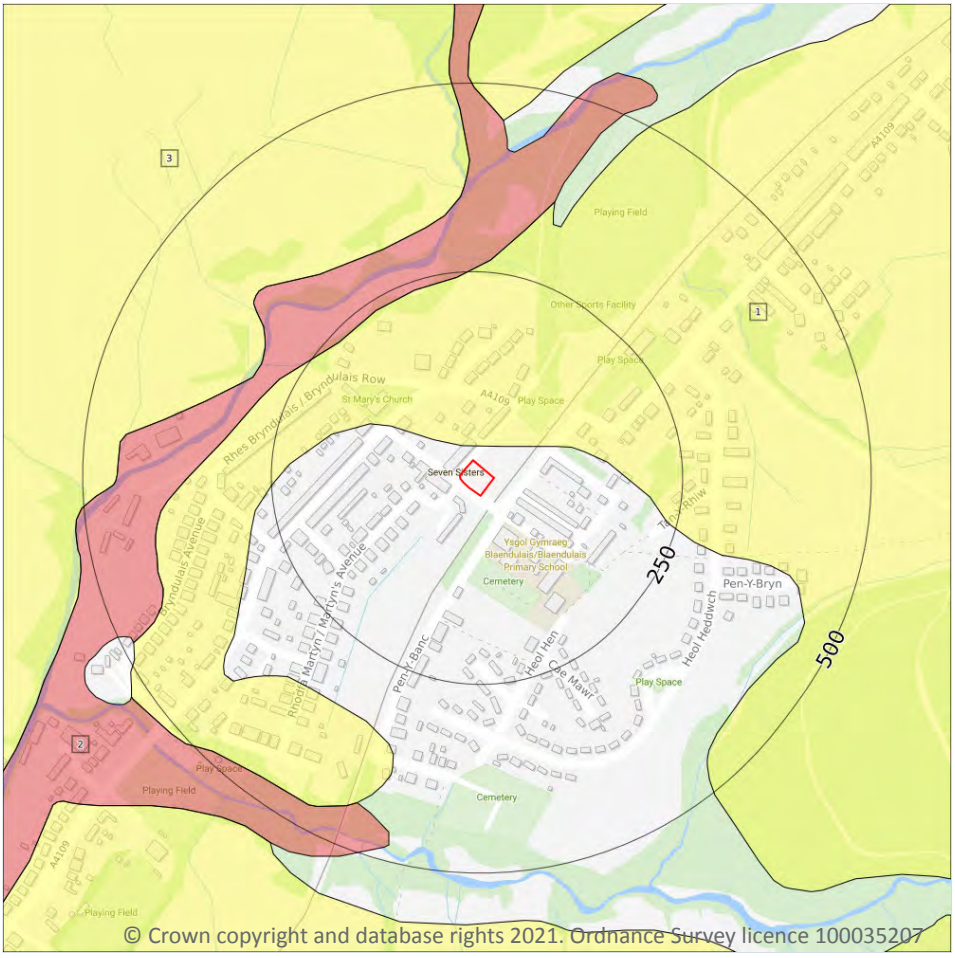
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

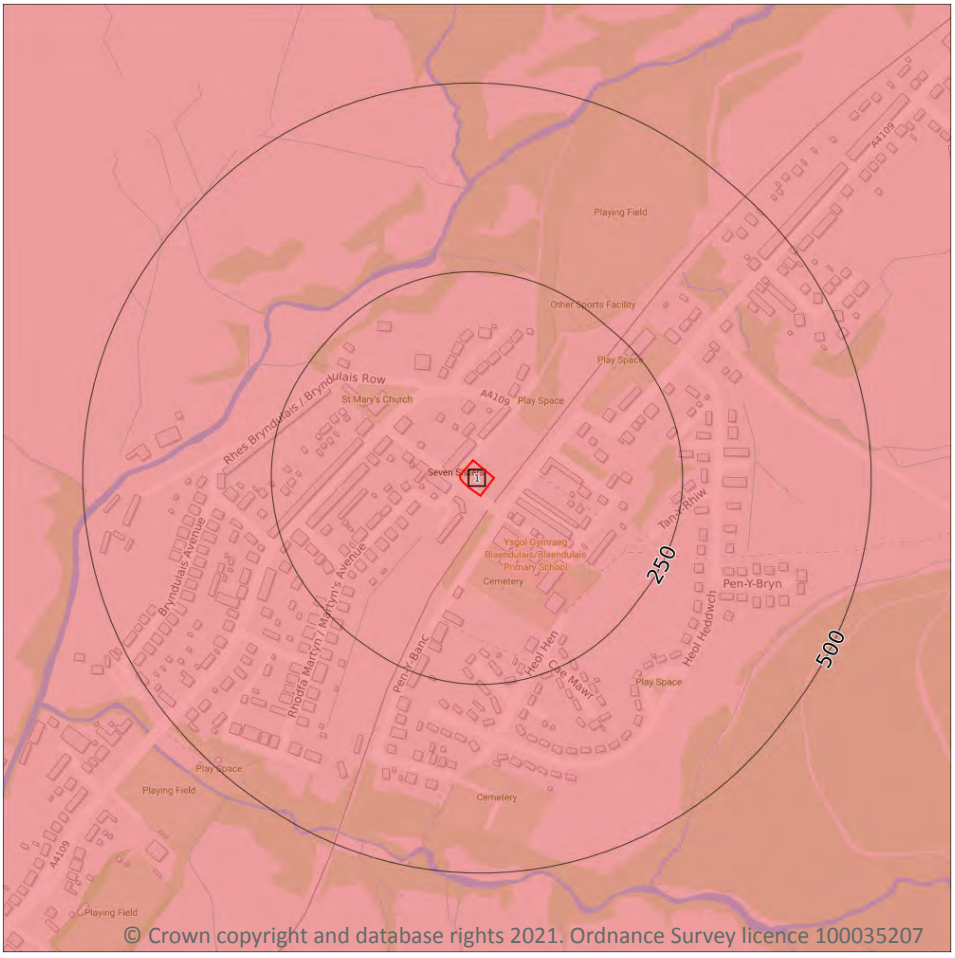
Features are displayed on the Hydrogeology map on **page 36**

ID	Location	Designation	Description
1	19m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	234m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	302m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	1

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 38**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability

5.3 Groundwater vulnerability

Records within 50m	3

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 39**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: >90% Recharge potential: Medium**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	19m N	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	42m E	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones

Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	2

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 41**

ID	Location	Details	
-	1412m S	Status: Historical Licence No: 21/58/73/0019 Details: Make-Up or Top Up Water Direct Source: EAW Surface Water Point: TRIBUTARY OF NANT-Y-CAFN Data Type: Point Name: 3J's Coal Trading Company Ltd Easting: 281950 Northing: 207480	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/05/1994 Expiry Date: 30/11/2007 Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -
-	1736m S	Status: Historical Licence No: 21/58/73/0019 Details: Make-Up or Top Up Water Direct Source: EAW Surface Water Point: TRIBUTARY OF NANT-Y-CAFN Data Type: Point Name: 3J's Coal Trading Company Ltd Easting: 282060 Northing: 207160	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/05/1994 Expiry Date: 30/11/2007 Issue No: 100 Version Start Date: 01/04/2000 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	**0**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	4

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 44**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	90m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
1	195m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	198m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	227m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	3

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 44**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 44**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River WB catchment**	**Dulais - headwaters to confluence with River Neath**	**GB110058032360**	**Neath**	**Tawe to Cadoxton**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 44**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	269m N	River	Dulais - headwaters to confluence with River Neath	GB110058032360	Good	Good	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 44**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Swansea Carboniferous Coal Measures**	**GB41002G201000**	**Poor**	**Poor**	**Good**	**2016**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

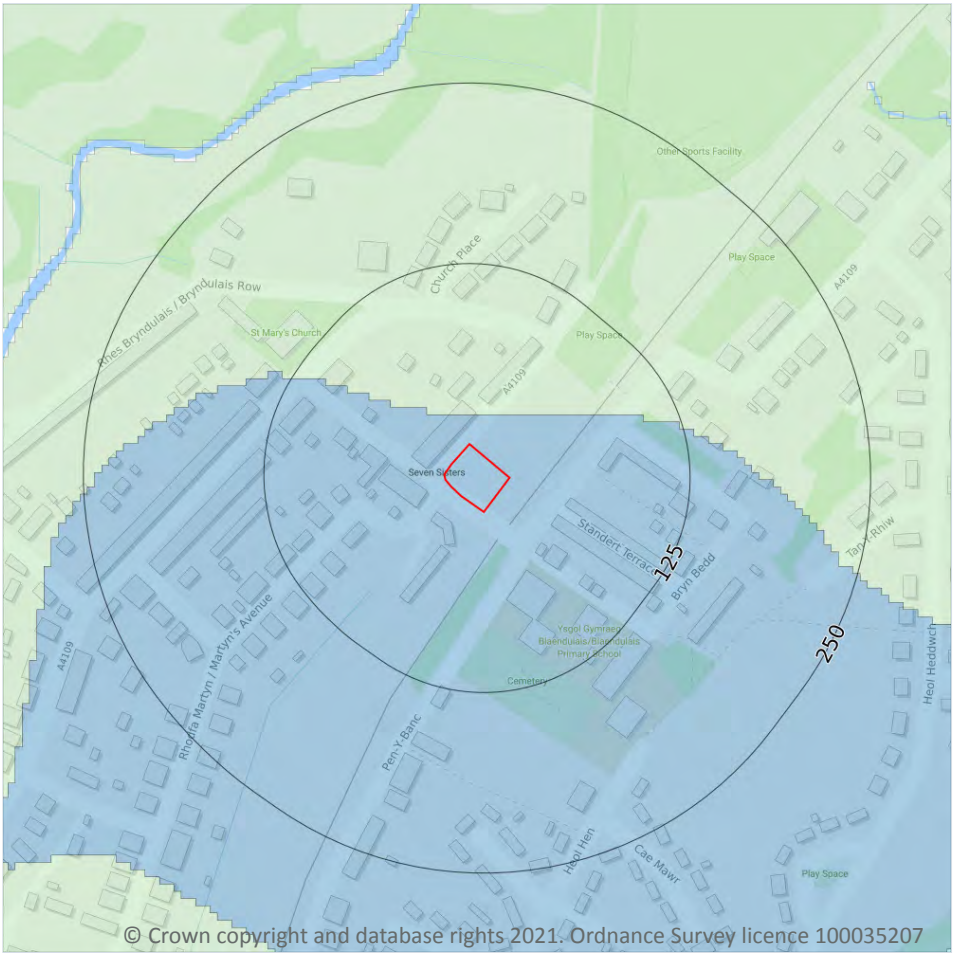
Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site. The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**Low**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 51**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	13

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 52**

ID	Location	Name	Woodland Type
1	201m N	Unknown	Ancient Semi Natural Woodland
2	356m N	Unknown	Ancient Semi Natural Woodland
3	499m N	Unknown	Ancient Semi Natural Woodland
4	519m N	Unknown	Ancient Semi Natural Woodland
5	578m SE	Unknown	Ancient Semi Natural Woodland
6	701m SE	Unknown	Plantation on Ancient Woodland Site
7	992m SE	Unknown	Ancient Semi Natural Woodland
8	995m SE	Unknown	Ancient Semi Natural Woodland
9	1078m SE	Unknown	Plantation on Ancient Woodland Site
10	1326m SW	Unknown	Ancient Semi Natural Woodland
-	1463m S	Unknown	Plantation on Ancient Woodland Site
-	1506m S	Unknown	Ancient Semi Natural Woodland
-	1667m S	Unknown	Plantation on Ancient Woodland Site

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

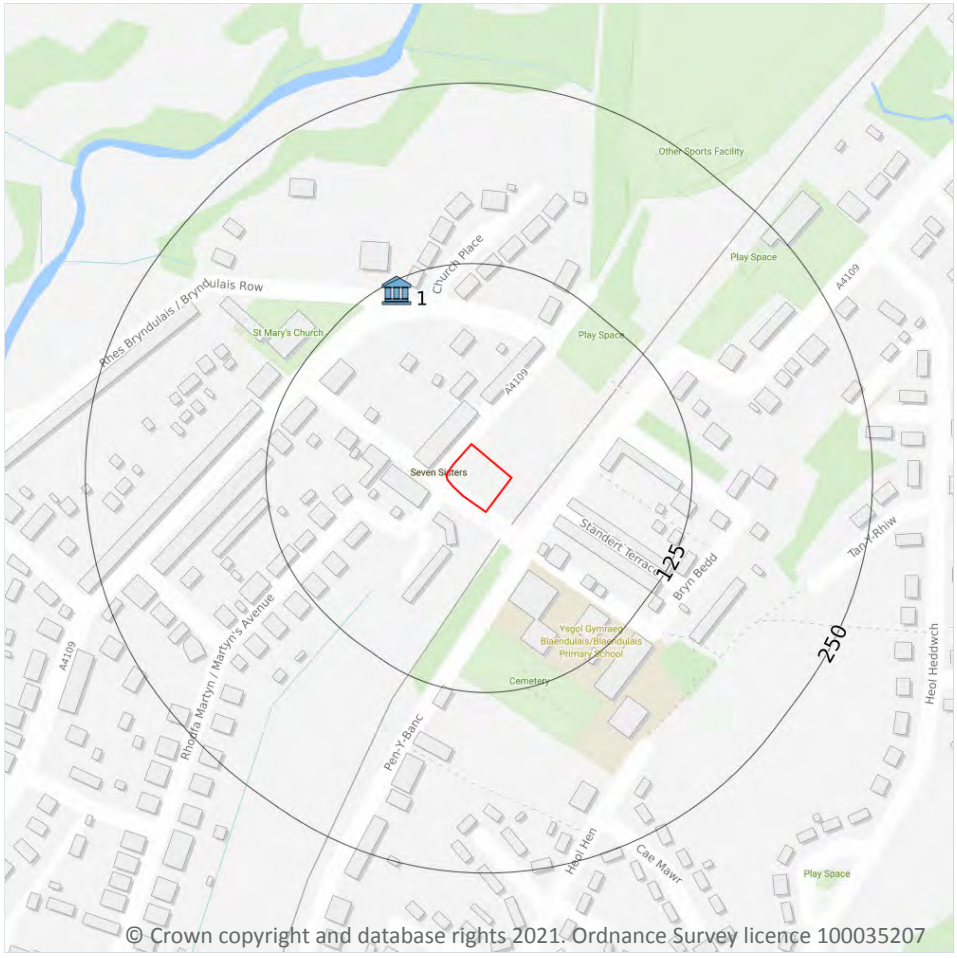
10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	1

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 58**

ID	Location	Name	Grade	Reference Number	Listed date
1	118m NW	The War Memorial, In A Prominent Position On The N Side Of A Bend In The A4109 Near The Centre Of Seven Sisters	II	82050	06/11/2003

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

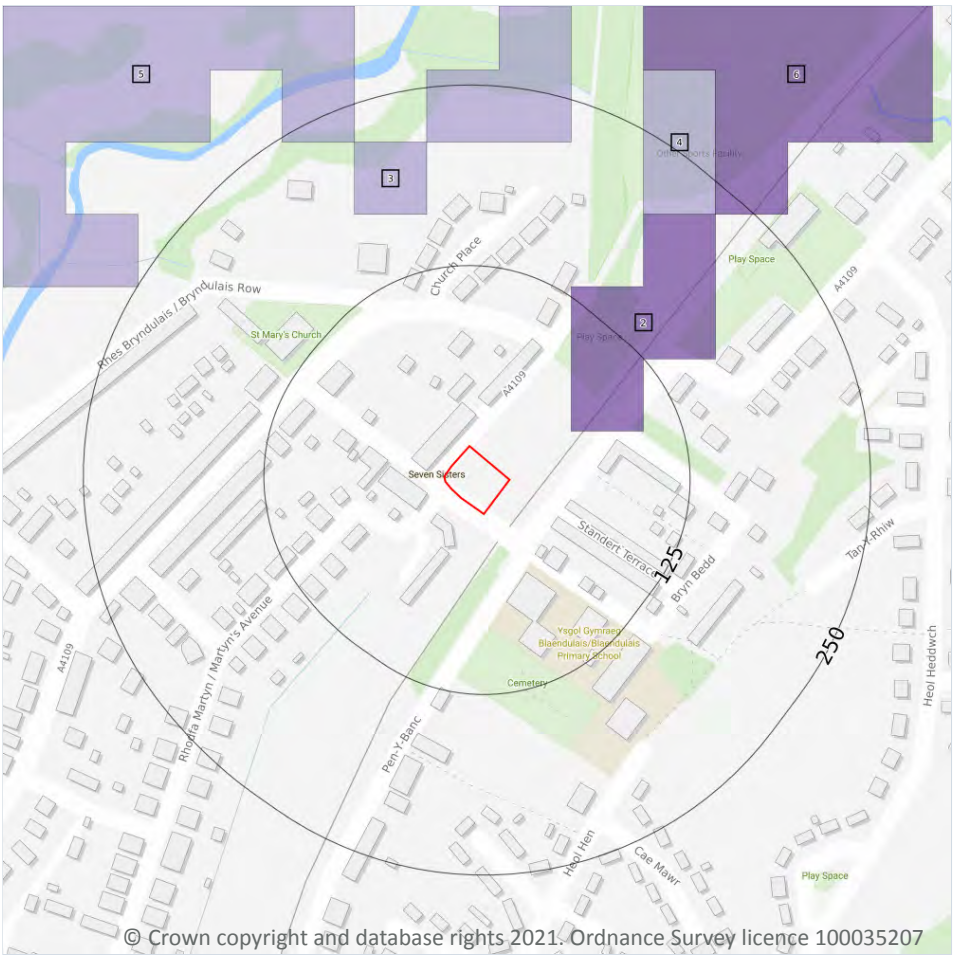
11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



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Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	6

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 61**

ID	Location	Classification	Description
2	54m NE	Grade 5	Very poor quality agricultural land
3	163m N	Grade 4	Poor quality agricultural land
4	201m NE	Grade 4	Poor quality agricultural land

ID	Location	Classification	Description
A	210m N	Grade 4	Poor quality agricultural land
5	225m N	Grade 4	Poor quality agricultural land
6	232m NE	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 65**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**No coverage**	**No coverage**	**No coverage**	**NoCov**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

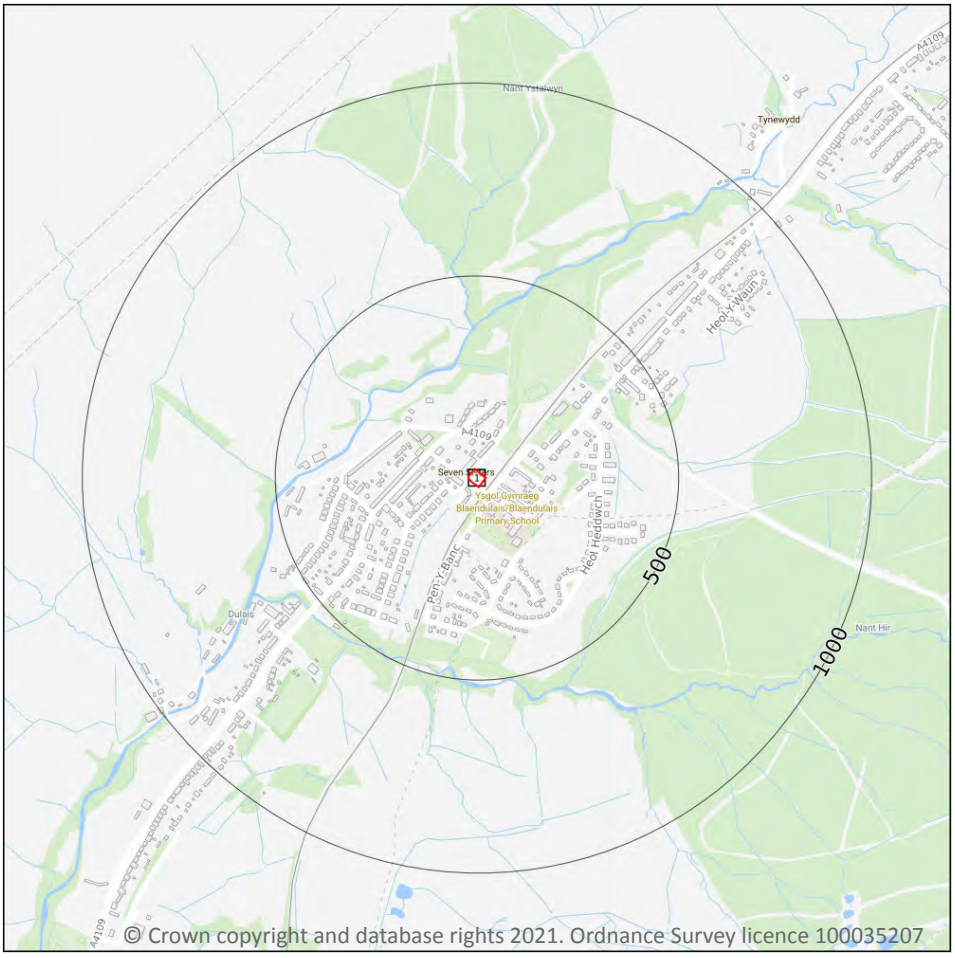
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

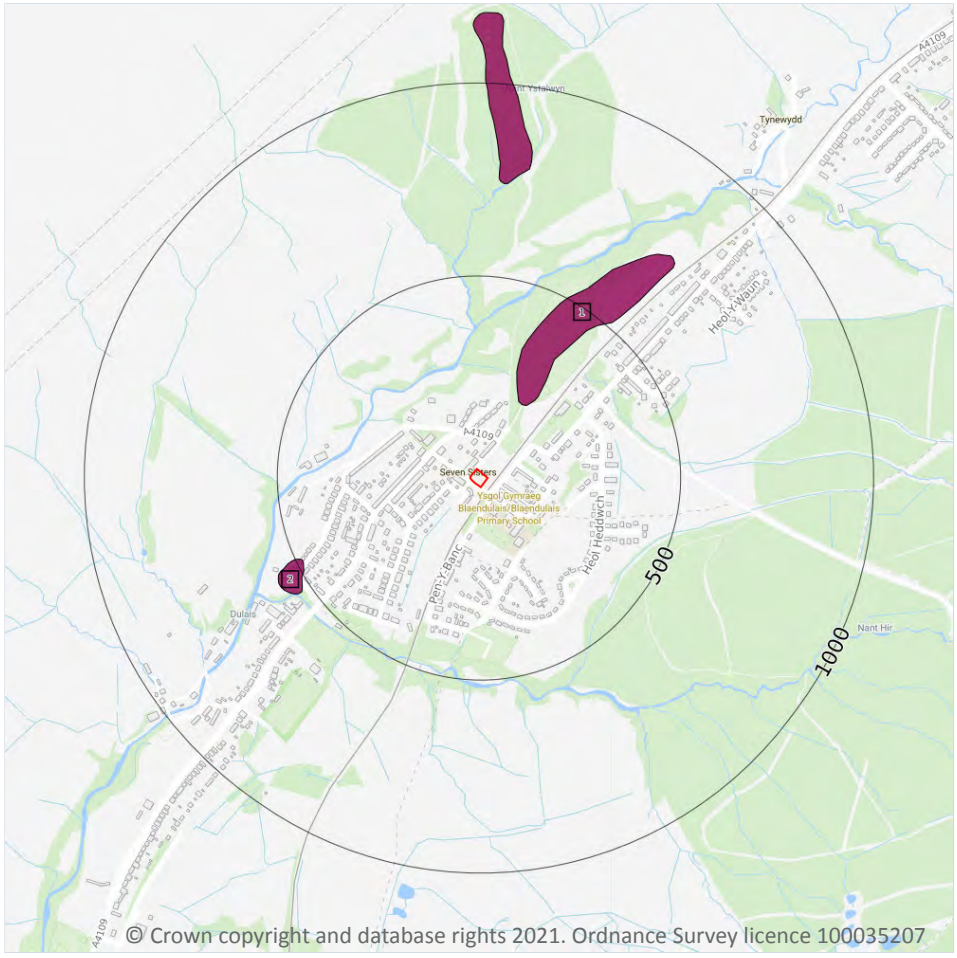
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 69**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW231_merthyr_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



Site Outline

Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m	2

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 70**

ID	Location	LEX Code	Description	Rock description
1	204m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	484m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

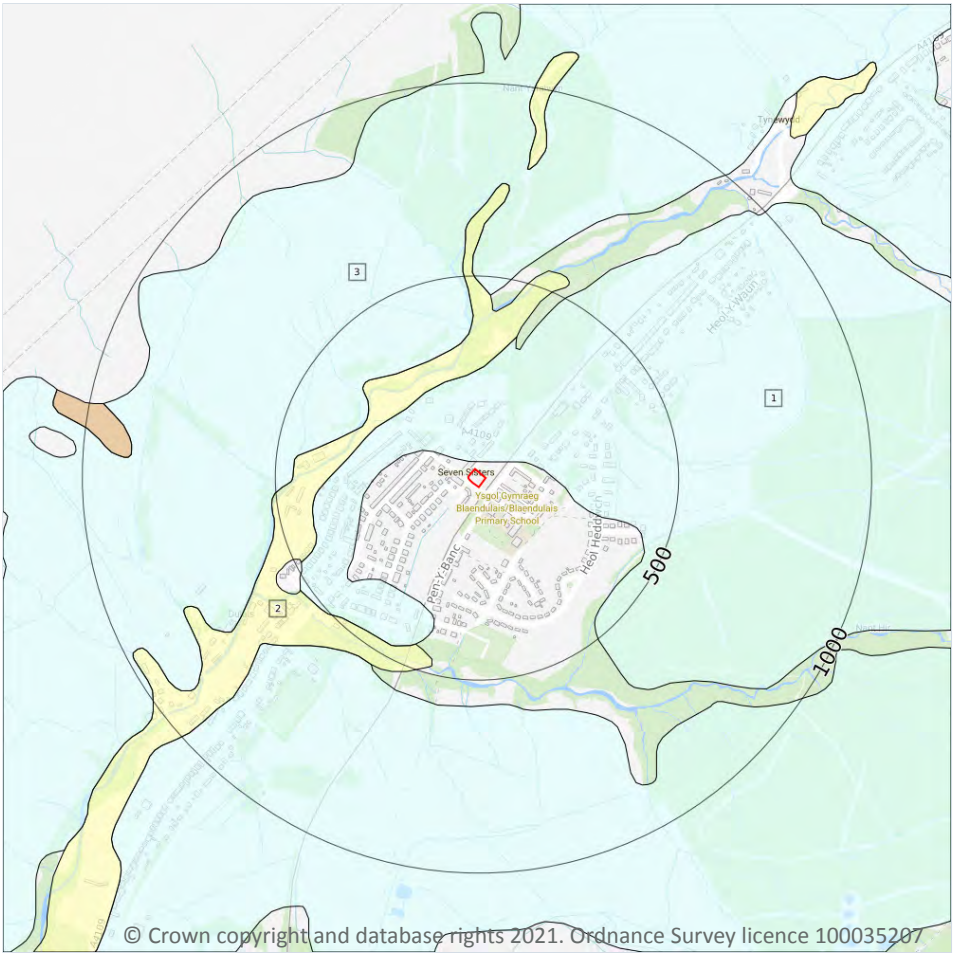
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m	3

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 72**

ID	Location	LEX Code	Description	Rock description
1	19m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	234m NW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	302m NW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
19m SE	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

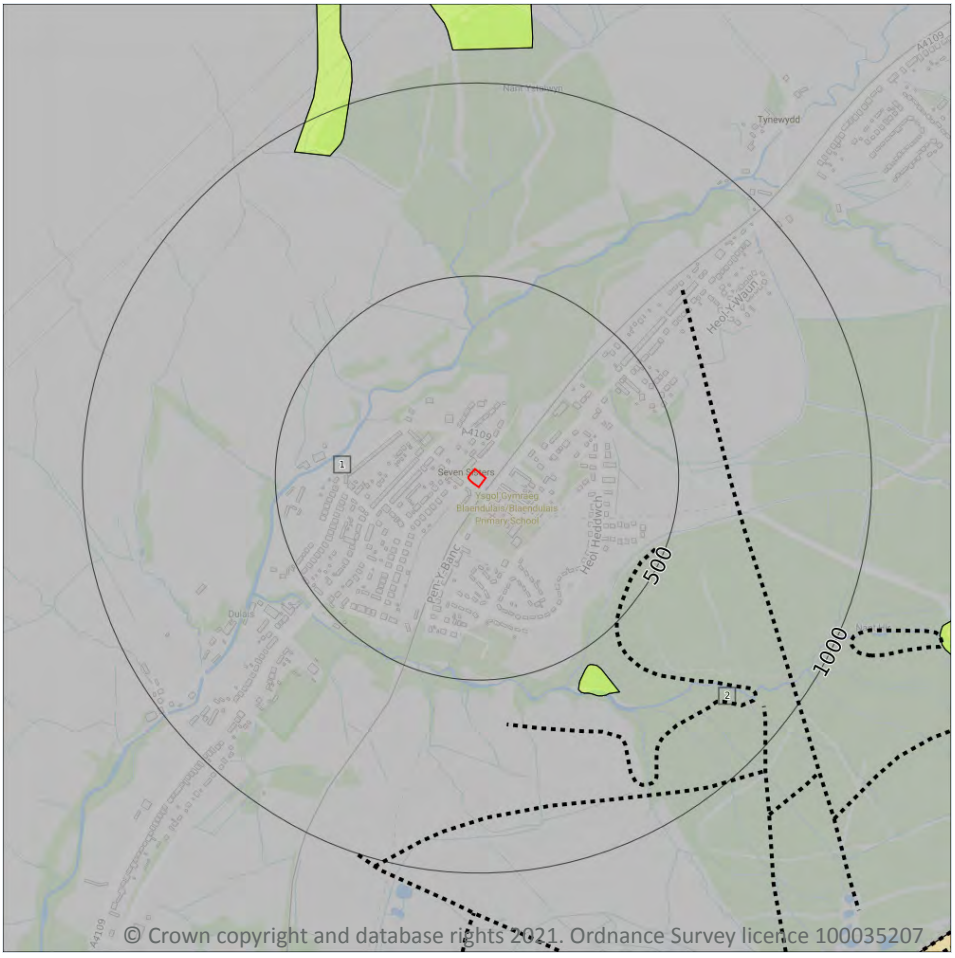
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SWMCM-MDSS**	**SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Moderate**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	1

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74**

ID	Location	Category	Description
2	457m SE	FOSSIL_HORIZON	Marine band

This data is sourced from the British Geological Survey.

16 Boreholes

Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m	1

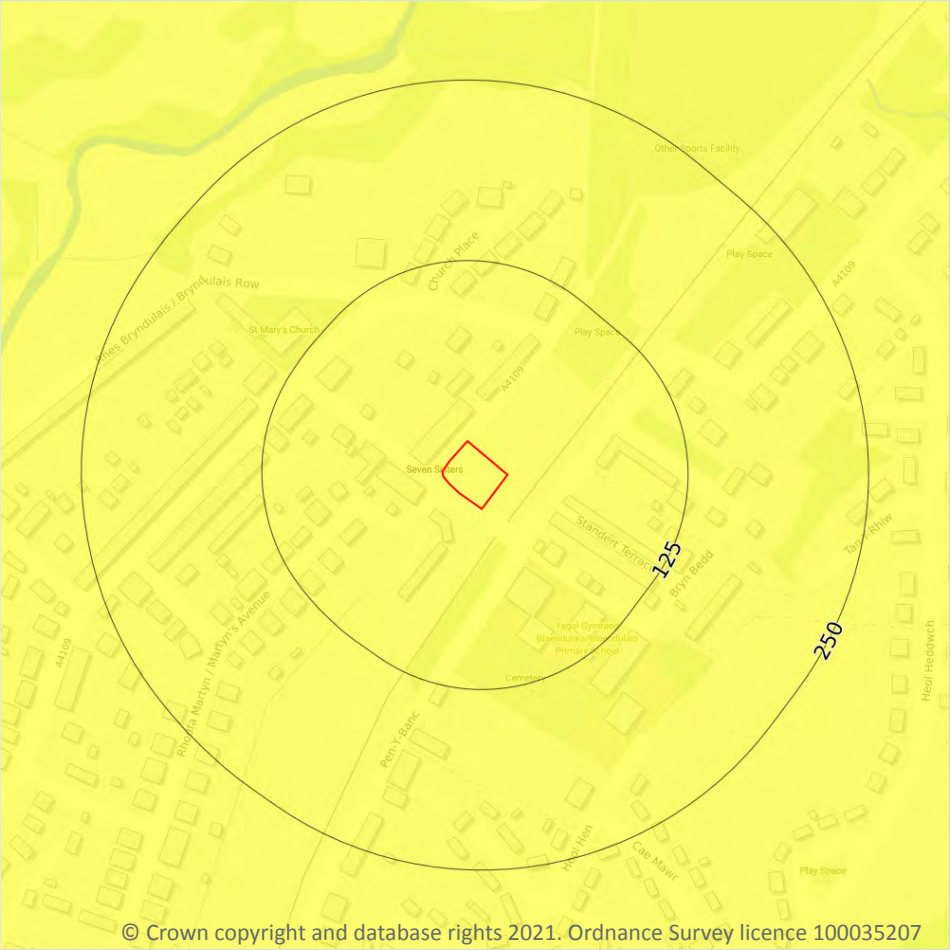
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 76**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	229m NE	282040 209140	SEVEN SISTERS PIT 1	217.86	N	258128

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



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17.1 Shrink swell clays

Records within 50m	1

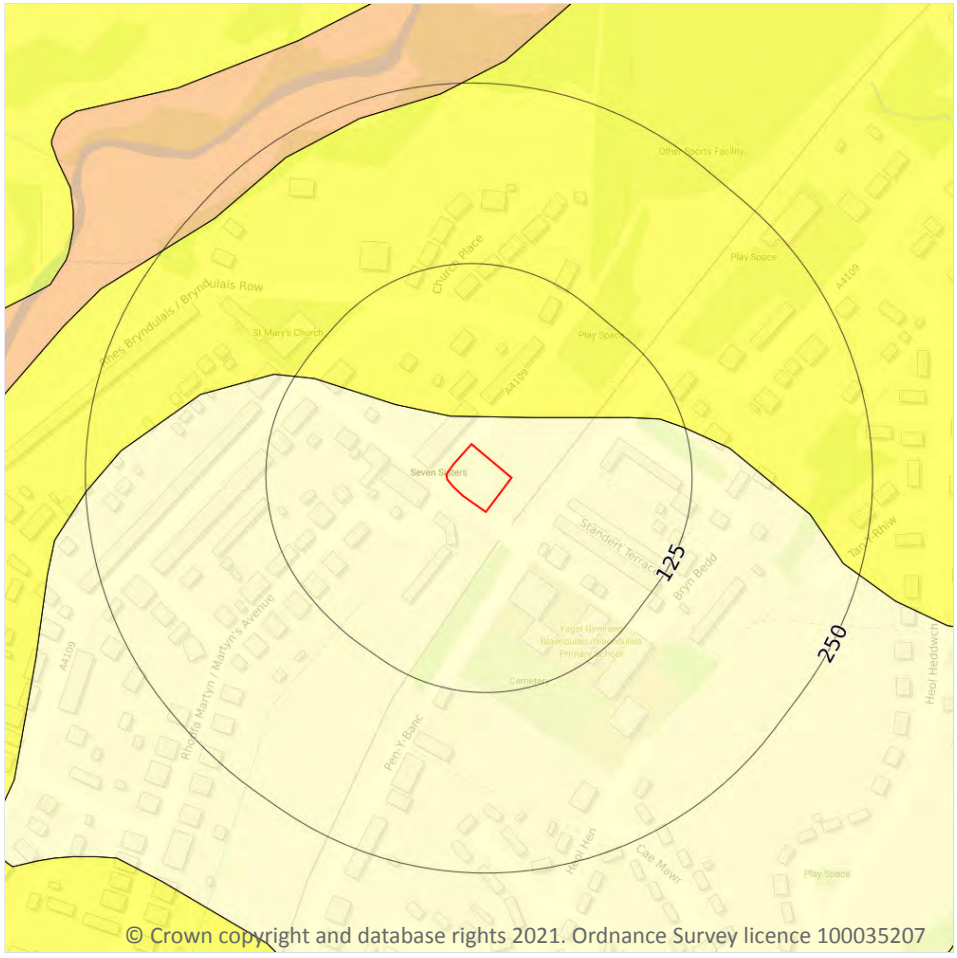
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 77**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

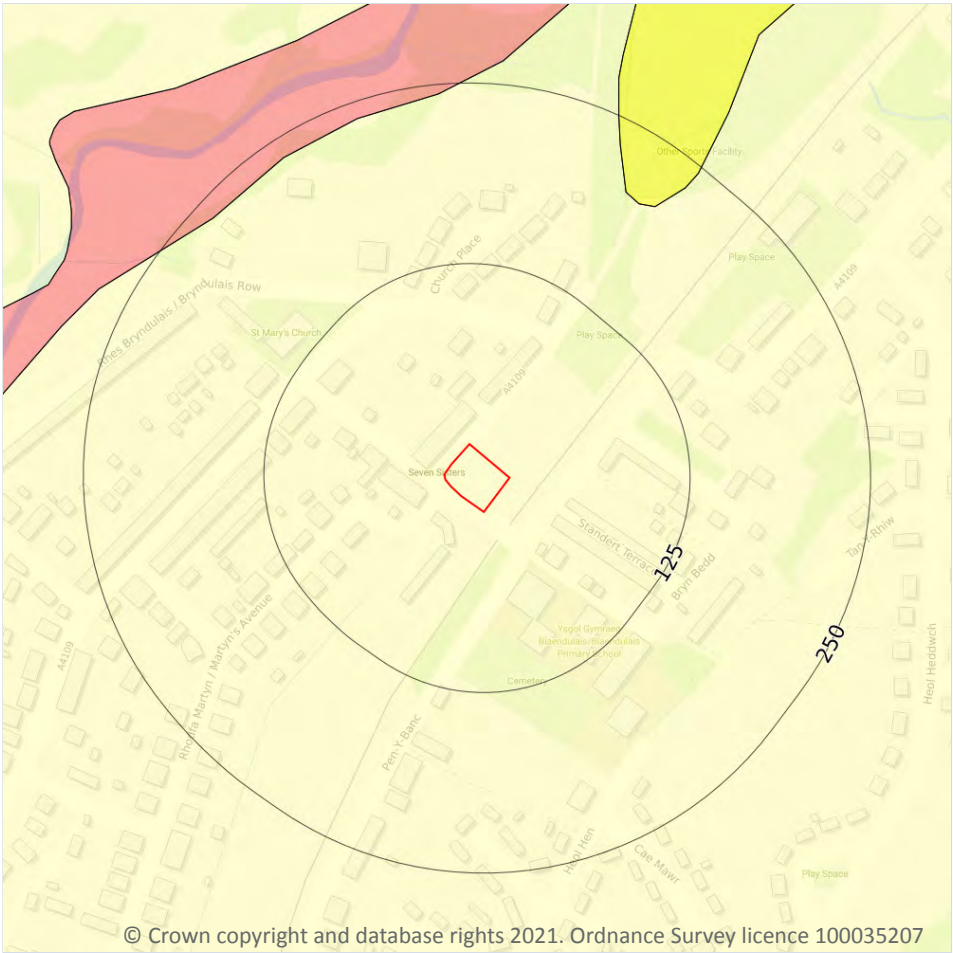
Features are displayed on the Natural ground subsidence - Running sands map on **page 78**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

Location	Hazard rating	Details
19m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

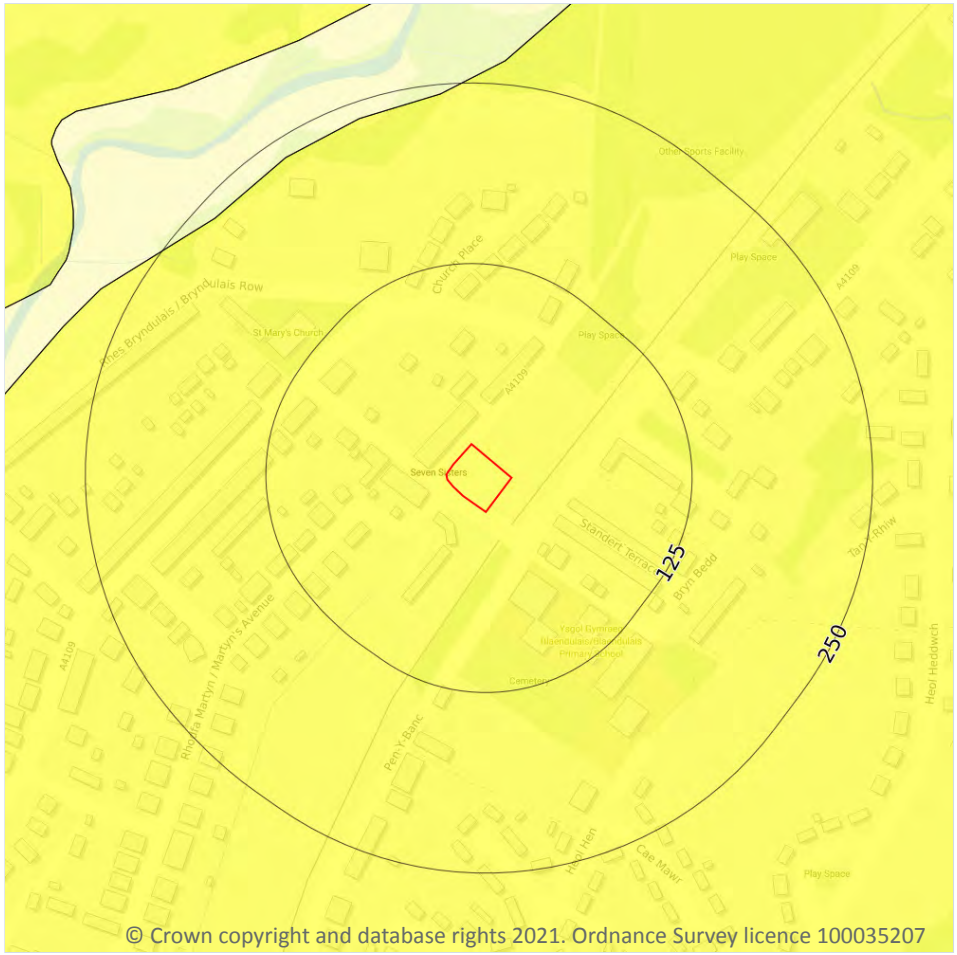
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 80**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



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Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

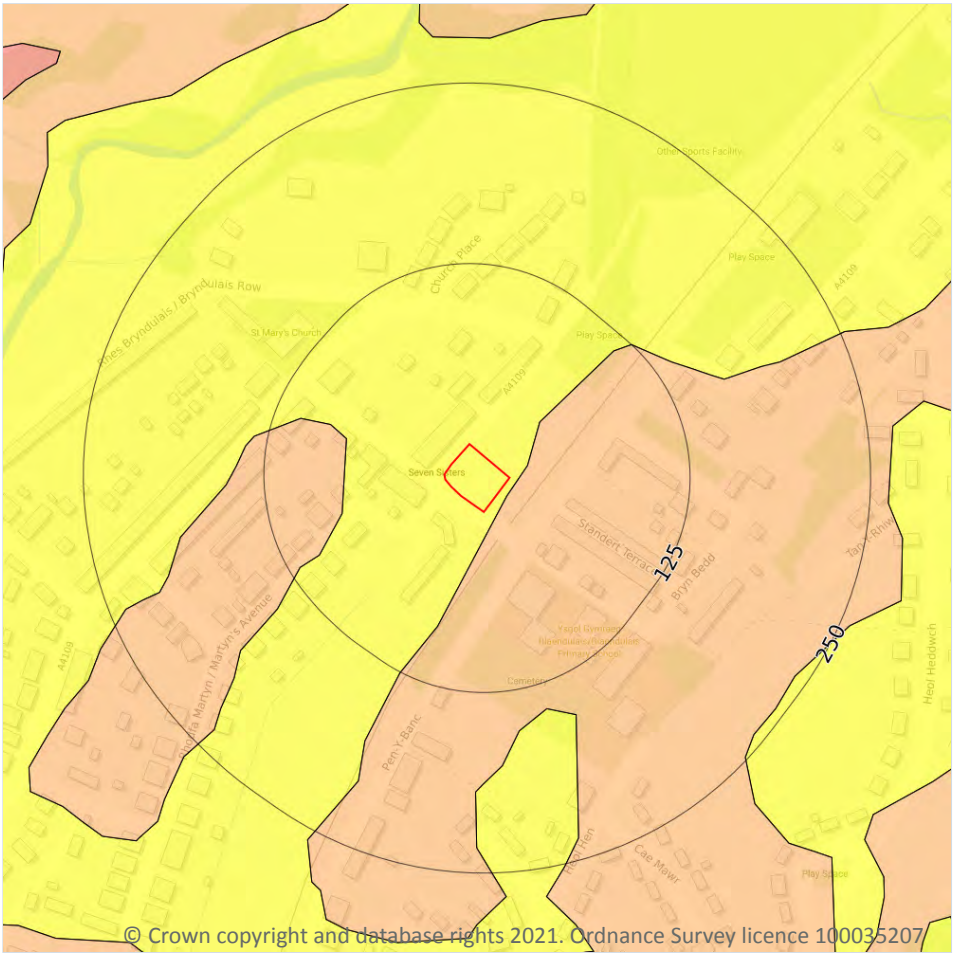
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 81**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	2

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

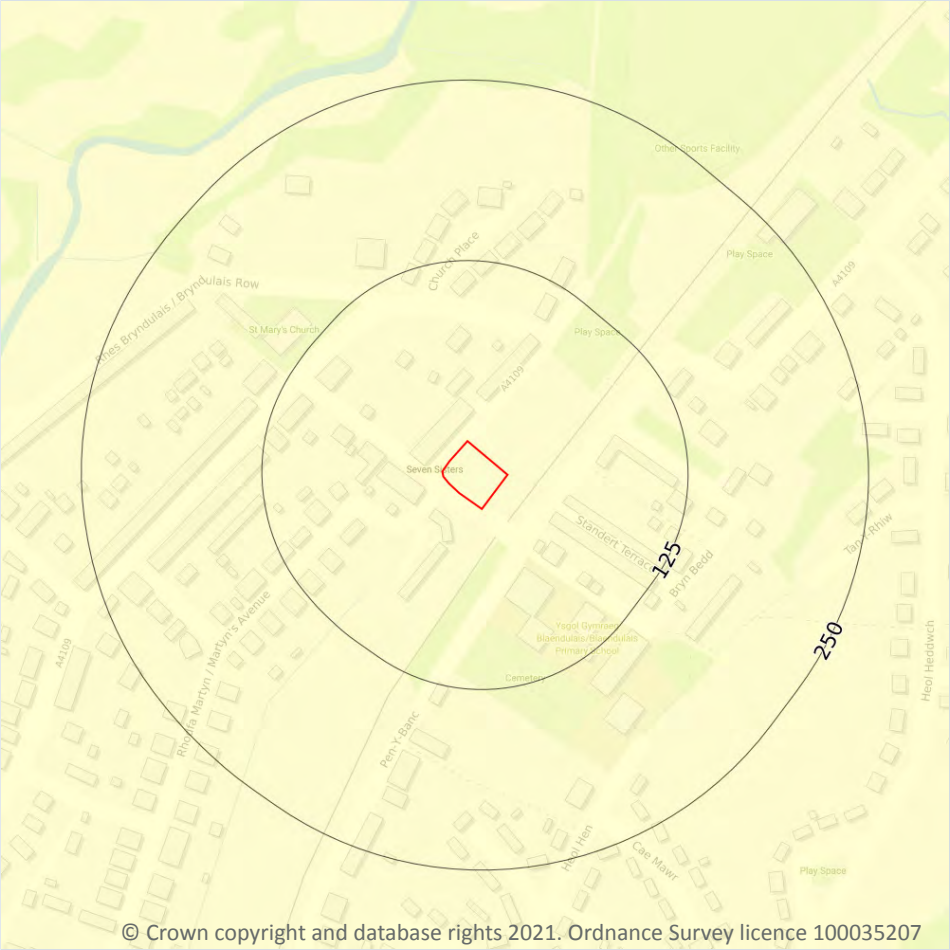
Features are displayed on the Natural ground subsidence - Landslides map on **page 82**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

Location	Hazard rating	Details
6m SE	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

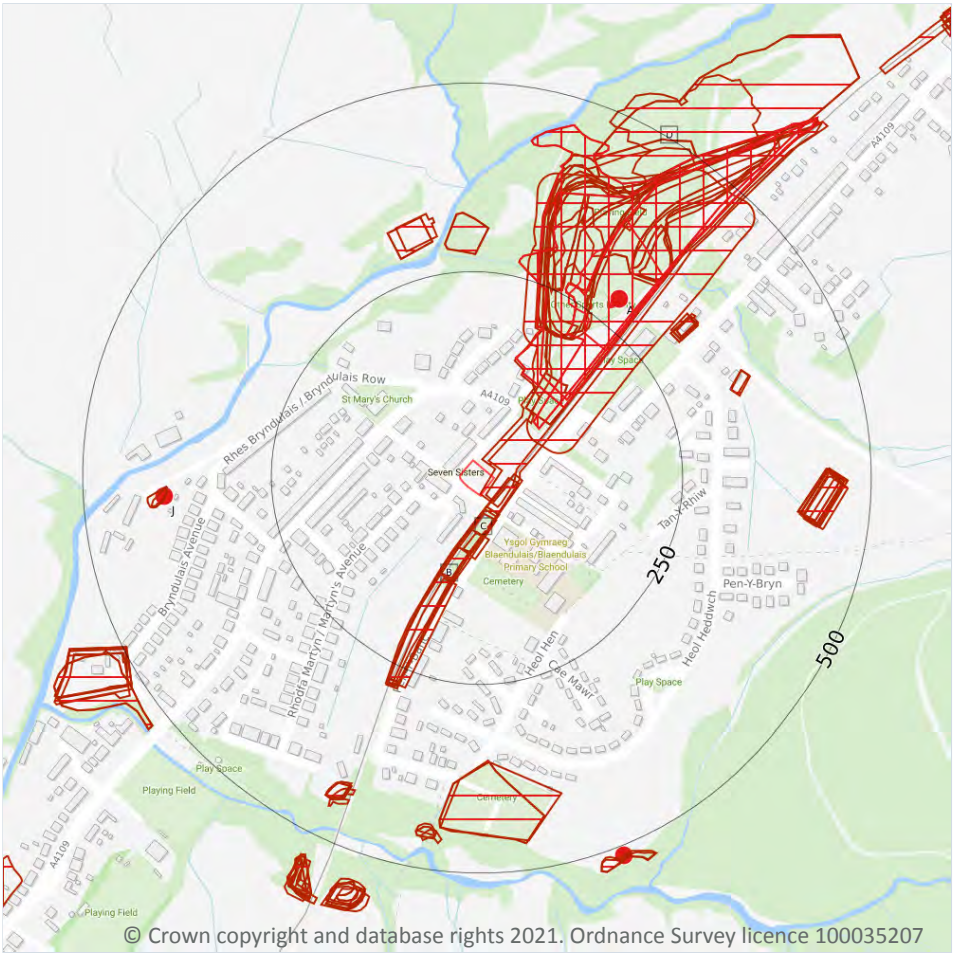
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 84**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	2

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Details	Description
A	288m NE	Name: Seven Sisters Pit Address: Seven Sisters, NEATH, West Glamorgan Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
J	393m W	Name: Bryn-dulais Address: Seven Sisters, NEATH, West Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	28

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Mill Ponds**	**1921**	**1:10560**
A	3m SE	Colliery	1921	1:10560
B	15m SE	Cuttings	1877	1:10560
B	16m SE	Cuttings	1876	1:10560
B	17m SE	Cuttings	1914	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
B	17m SE	Cuttings	1914	1:10560
C	20m S	Cuttings	1921	1:10560
B	25m S	Cuttings	1921	1:10560
C	46m S	Cuttings	1948	1:10560
C	48m S	Cuttings	1921	1:10560
A	72m NE	Colliery	1903	1:10560
A	98m NE	Colliery	1921	1:10560
A	98m NE	Colliery	1921	1:10560
B	115m SW	Cuttings	1948	1:10560
B	117m SW	Cuttings	1921	1:10560
B	120m SW	Cuttings	1921	1:10560
A	131m NE	Colliery	1948	1:10560
A	142m NE	Colliery	1901	1:10560
A	147m NE	Colliery	1914	1:10560
A	147m NE	Colliery	1914	1:10560
A	197m NE	Refuse Heap	1921	1:10560
D	198m NE	Refuse Heap	1988	1:10000
D	198m NE	Refuse Heap	1964	1:10560
A	200m NE	Refuse Heap	1921	1:10560
A	201m NE	Refuse Heap	1921	1:10560
A	201m NE	Refuse Heap	1921	1:10560
A	205m NE	Unspecified Heap	1901	1:10560
D	246m NE	Refuse Heaps	1948	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	14

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Land Use	Year of mapping	Mapping scale
A	88m NE	Unspecified Mine	1988	1:10000
A	88m NE	Unspecified Mine	1964	1:10560
A	131m NE	Colliery	1948	1:10560
A	142m NE	Colliery	1901	1:10560
A	224m NE	Coal Pit	1877	1:10560
A	271m NE	Unspecified Shafts	1877	1:10560
A	273m NE	Unspecified Shaft	1876	1:10560
A	285m NE	Unspecified Shaft	1877	1:10560
A	289m NE	Unspecified Shaft	1876	1:10560
-	991m NE	Coal Pit	1877	1:10560
-	992m NE	Old Coal Pit	1901	1:10560
-	993m NE	Old Coal Pit	1948	1:10560
-	993m NE	Old Coal Pit	1903	1:10560
-	994m NE	Coal Pit	1876	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

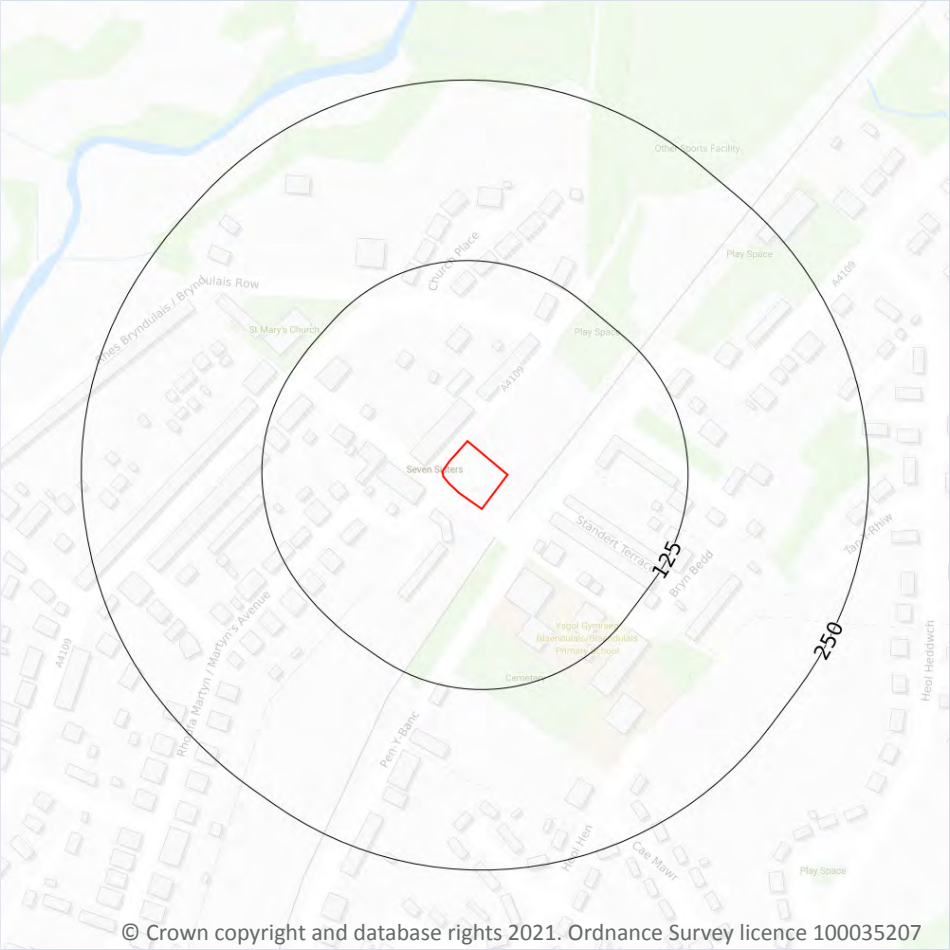
18.13 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



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Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 91**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 - 2.2 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
19m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
43m SE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

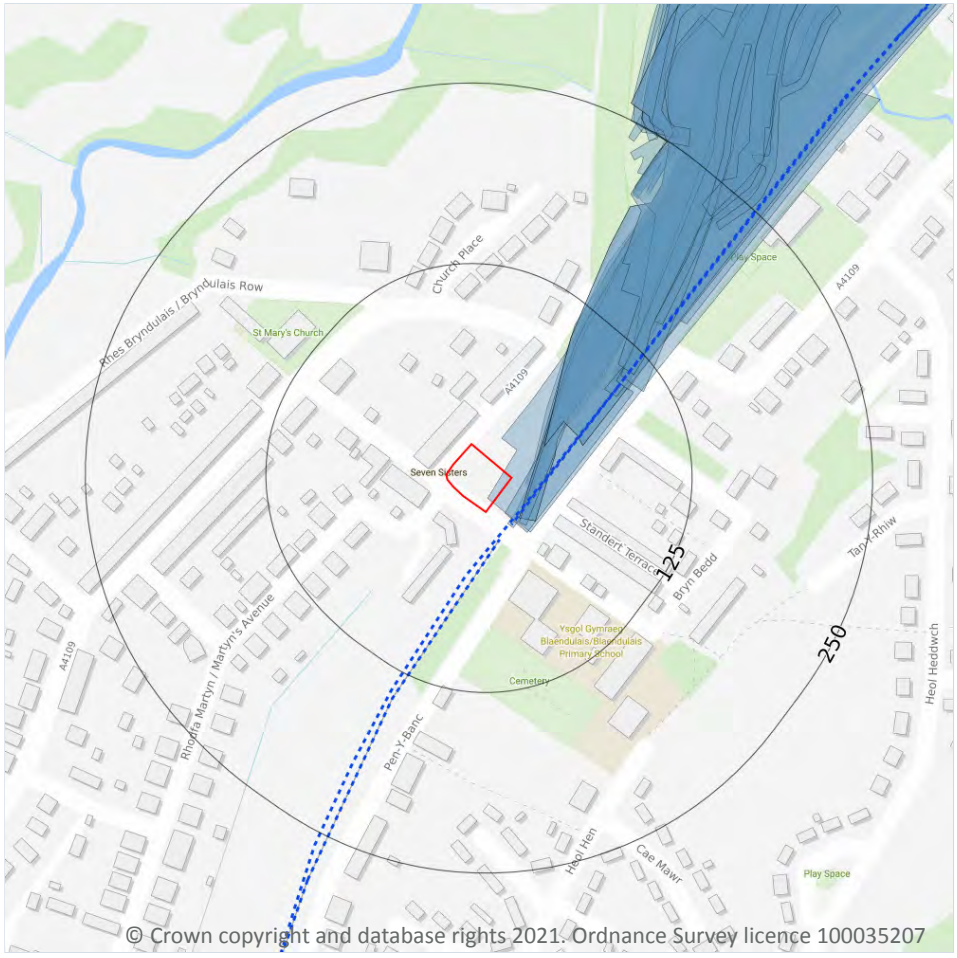
20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	23

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 93**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1921**	**10560**
9m SE	Railway Sidings	1948	10560
11m E	Railway Sidings	1918	2500
13m E	Railway Sidings	1914	10560
13m SE	Mineral Railway Sidings	1962	2500
15m E	Railway Sidings	1921	10560
32m NE	Railway Sidings	1988	10000
32m NE	Railway Sidings	1964	10560
89m NE	Railway Sidings	1877	10560
92m NE	Railway Sidings	1962	2500
97m NE	Railway Sidings	1899	2500
99m NE	Railway Sidings	1879	2500
99m NE	Railway Sidings	1903	10560
103m NE	Railway Sidings	1877	2500
104m NE	Railway Sidings	1876	10560
108m NE	Tramway Sidings	1901	10560
128m NE	Tramway Sidings	1904	2500

Location	Land Use	Year of mapping	Mapping scale
147m NE	Railway Sidings	1921	10560
206m NE	Tramway Sidings	1904	2500
224m NE	Railway Sidings	1921	10560
227m NE	Tramway Sidings	1903	10560
228m NE	Tramway Sidings	1899	2500
249m NE	Railway Sidings	1921	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	5

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 93**

Location	Name	Type
18m SE		rail
20m SE	Not given	Single Track
21m SE	Not given	Single Track

Location	Name	Type
97m NE	Not given	Single Track
155m NE	Not given	Single Track

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

APPENDIX D
CONSULTANTS COAL MINING REPORT

Consultants Coal Mining Report	GS-8293535
The Coal Authority, Overview of Activity	Summary of findings

The Coal Authority

Consultants

Coal Mining Report

Accommodation, 8, High Street,
Seven Sisters, Sa10 9dn
East Sussex

Date of enquiry:	**27 October 2021**
Date enquiry received:	**27 October 2021**
Issue date:	**27 October 2021**
Our reference:	**51002704201001**
Your reference:	**GS-8293535**

Consultants

Coal Mining Report

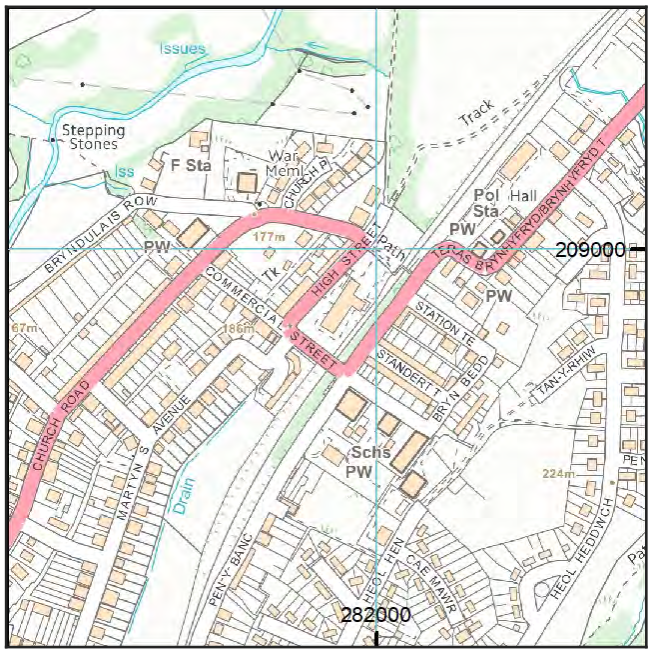
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Accommodation, 8, High Street, Seven Sisters, Sa10 9dn
East Sussex



Approximate position of property

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How to contact us

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/thecoalauthority

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
SEVEN SISTERS	RED VEIN	Coal	4T2K	150	Beneath Property	6.0	South-West	100	1908
unnamed	CAERAU	Coal	4HRR	153	North-East	0.0	East	80	1944
unnamed	RED VEIN	Coal	4GAF	155	East	5.1	South-West	110	1900
unnamed	CAERAU	Coal	4GH4	155	North	5.4	South	100	1941
unnamed	CAERAU	Coal	4GA9	155	North-East	0.0	East	80	1941
unnamed	CAERAU	Coal	4T2L	156	North-East	4.4	South-West	80	1941
SEVEN SISTERS	RED VEIN	Coal	4HR8	156	North-East	5.1	South	110	1900
unnamed	RED VEIN	Coal	4GH5	157	North	5.9	South	100	1915
SEVEN SISTERS	LOWER NINE FOOT	Coal	4T2I	200	Beneath Property	5.6	South	190	1892
unnamed	BUTE	Coal	4I60	203	North-West	5.1	South-West	150	1932
SEVEN SISTERS	LOWER NINE FOOT	Coal	4HRD	205	North-East	5.4	South-West	200	1905
unnamed	BUTE	Coal	4GHC	208	North	4.7	South	150	1934
unnamed	LOWER NINE FOOT	Coal	4GB4	208	East	0.0	East	300	1913
unnamed	LOWER NINE FOOT	Coal	4GB2	208	South-East	0.0	East	300	1913
unnamed	LOWER NINE FOOT	Coal	4GB5	208	North-East	0.0	East	300	1913
unnamed	BUTE	Coal	4T2F	211	Beneath Property	6.0	South-West	110	1930
unnamed	LOWER NINE FOOT	Coal	4GHI	215	North	4.4	South	190	1910
unnamed	BUTE	Coal	4HRI	217	North-East	0.0	East	100	1935
unnamed	LOWER NINE FOOT	Coal	4GHL	218	North-West	4.4	South	190	1896
unnamed	BUTE	Coal	4GAB	232	East	2.4	South-West	100	1939

Probable unrecorded shallow workings

None.

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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:

SWA4030	SWR3722	SWR4023
SW483	SWR640	SW134
14355	10973	SWR641

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

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
GORLLWYN	Coal	Yes	Within	N/A	36

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.

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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.

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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.

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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.

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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.

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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.

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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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The Coal Authority

Summary of findings

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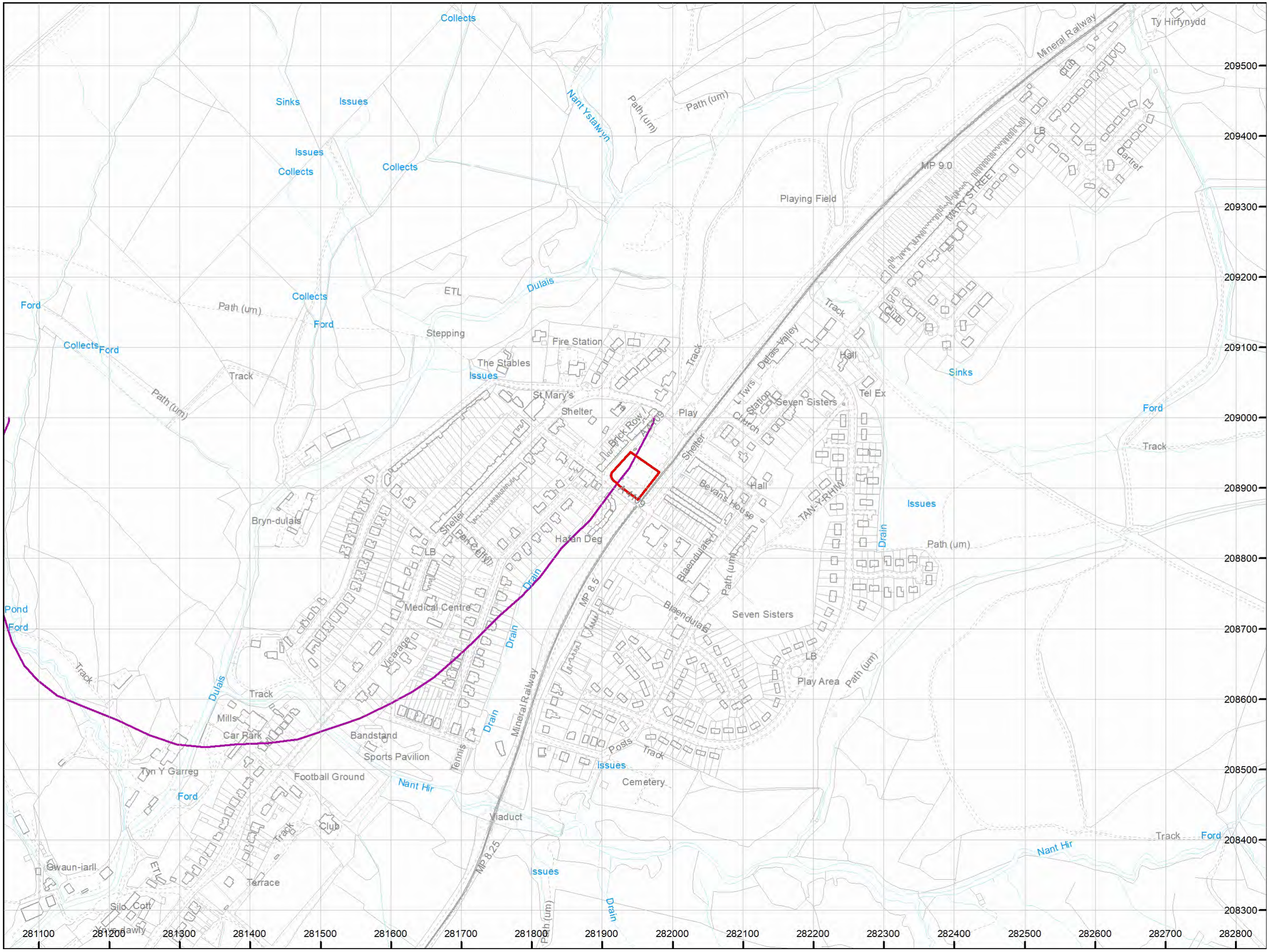
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Outcrop (Proven)



How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

APPENDIX E

SITE WALKOVER PHOTOGRAPHS AND SITE WALKOVER CHECKLIST

Site Walkover Photographs	Sheets 1 to 9
Site Walkover Checklist	H1061-21 SWC

Photographs

1 - Looking south towards site from current vehicular entrance

2 - Centre of site (looking southwest)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	1
	Carried out for	Neath Port Talbot Council	

Photographs

3 - Centre of site (looking west)

4 - Centre of site (looking southeast)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	2
	Carried out for	Neath Port Talbot Council	

Photographs

5 - Southwest boundary of site (looking southeast)

6 - Southwest boundary of site (looking northwest)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	3
	Carried out for	Neath Port Talbot Council	

Photographs

7 - Electrical Substation located in west of site

8 - Electrical Substation

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	4
	Carried out for	Neath Port Talbot Council	

Photographs

9 - Above ground gas pipe to south of site (looking southeast)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	5
	Carried out for	Neath Port Talbot Council	

Photographs

10 - Above ground gas pipe crossing railway, to southeast of site

11 - Railway running along southeast boundary of site (looking northeast)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	6
	Carried out for	Neath Port Talbot Council	

Photographs

12 - Land to southeast of site (beyond railway) (A4109) (looking southwest)

13 - Land to north of site (looking north)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	7
	Carried out for	Neath Port Talbot Council	

Photographs

14 - Land to northwest of site, High Street (A4109) (looking southwest)

15 - Area to north of site, current vehicular entrance (looking east)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	8
	Carried out for	Neath Port Talbot Council	

Photographs

16 - Area to north of site, current vehicular entrance (looking east)

17 - Unused pedestrian entrance to northwest of site (looking southeast)

Notes:	Project	Childcare Unit Blaendulais	Sheet
	Project No.	H1061-21	9
	Carried out for	Neath Port Talbot Council	

Site Walkover Checklist (H1061-21 SWC)

REFERENCES	
Project No.	H1061-21
Site Address	Land adjacent to: High Street Seven Sisters Neath SA10 9DN
Date of visit	1st November 2021
Prepared by	Ruth Blair
SITE – GENERAL	
Plan of site	(See Appendix A)
Site size (area) : % building, % hardstanding, % open space / other	~ 90% Overgrown/trees ~ 5% concrete slab ~ 5% Electrical Substation
Current use (occupants and operations)	Unused, overgrown site Established trees located along the southern and eastern boundaries of the site.
SITE – BUILDINGS	
Age of building(s)	Electricity substation: unknown Concrete slab: unknown
Building appearance: no. of storeys, basement, roofing type, chimneys / stacks?, car park, service areas	N/A
Building Appearance Photo	N/A
Tanks: location (internal / external : above or below ground), age / condition, size / capacity, type, bunding (condition), refuelling point, evidence of stains / spills	Electricity substation, appeared to be working at time of walkover
Image of Tank(s)	See Appendix E (photographs 7 and 8)
Heating : electric/gas/oil	N/A
Chemical storage : drums, other chemical stores	N/A
Gas control measures (e.g. vents, cowls, monitoring / alarms)	N/A
Other evidence of industrial activity	None observed
Photo of industrial factors (if applicable)	N/A
Asbestos / deleterious materials – any asbestos surveys?, removal programmes?	Unknown. Previous buildings on site demolished. Potential asbestos containing materials within demolished material beneath existing ground.
Electrical equipment / Transformers – check for PCBs? Backup power supplies (generators)	Overhead cables observed along the northwest and southwest boundaries of the site.

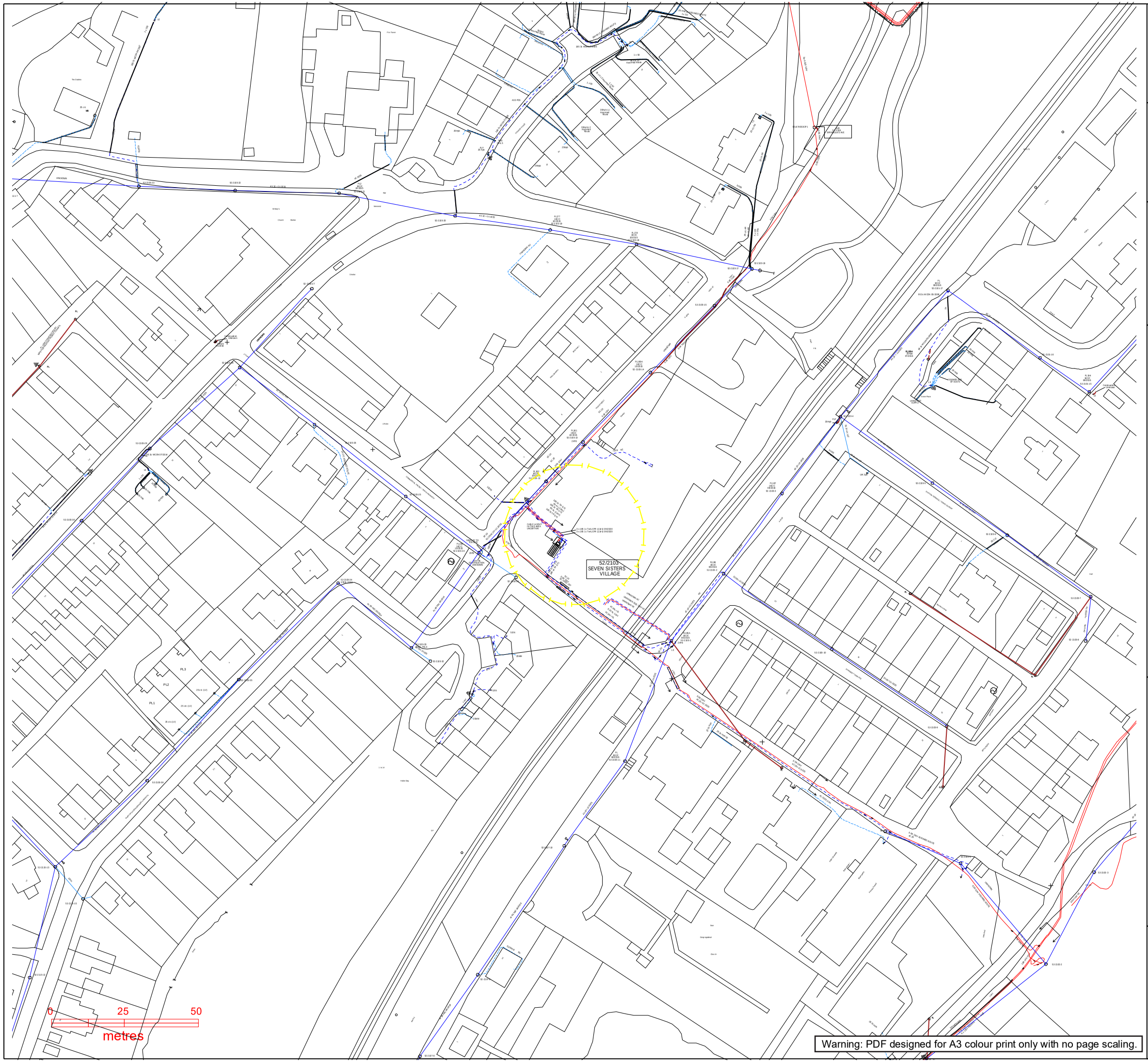
SITE	
Site surfacing: type (asphalt/concrete etc.), staining, weathering, subsidence, repairs. Landscaped areas.	**Onsite:** Topography of site is stepped with the highest point being the southern boundary of the site, this slopes steeply down to a flat area extending approximately 5 m towards the northeast. The topography then steps down again parallel with the southern boundary. The remainder of the site is relatively flat. The nature of the topography (stepped) appears to be man-made, assumed to be related to the previous use of the site, or the construction of Commercial Road to the south. A substation is located within the site. This appeared to be functioning at the time of the site walkover. A concrete slab is located adjacent to (west of) the electrical substation. This is presumed to be associated with the previous use of the site (now demolished). The majority of the site is largely overgrown with established trees along the southern and eastern boundaries of the site. The ground (grassy areas) underfoot during the site walkover was damp with some areas that felt marshy.
Drainage: interceptors, disposal of storm water / waste water, mains water supply?	Drainage observed approximately 60 m to the northeast of the site. Cover not lifted during site walkover.
Site topography – flat / sloping?, level compared to surroundings, evidence of filling or raising, earthworks?	Discussed previously
Vehicle maintenance : wash down areas, workshops, refuelling points	None observed during site walkover
Waste: skips / compounds, any hazardous waste? Burning grounds or incinerators	None observed during site walkover
Sub-stations: age, condition, transformers, operator, servicing?	Substation present within site. Discussed previously
Trees – effects on buildings, condition, species and height	Established trees are located along the southern boundary and eastern boundaries of the site.
Sloping ground – any indication of instability (cracks in ground, bulges, leaning trees, walls or poles), rotational slip scars.	Discussed previously
Ecological features of note – Burrows, bats, nest sites, designated preservation areas	None observed during site walkover
Other features of note within site	

SURROUNDING LAND USES	
General site context – industrial, commercial, urban, agricultural etc.	The site is surrounded largely by residential and light commercial buildings. The southeast boundary of the site is bound by a railway which runs in a northeast southwest direction. The west and southern areas of the site are bound by roads.
Land use – north	North: overgrown extending approx. 45 m northeast of the site. Beyond this the land is hardstanding, extending from 45 m to 75 m.
Land use – south	South: road (Commercial Road) runs along the southern boundary of the site. Overhead cables run parallel with this road.
Land use – east	East: the railway runs along the southeast boundary of the site. An above ground gas pipeline is located to the southeast of the site, this travels over the railway towards the east.
Land use – west	West: road (High Street) runs along the western boundary of the site. A bus stop is also located on this road. Overhead cables run parallel with this road.
Nearby sources of pollution – landfills, filling stations, industrial activity.	No notable sources of pollution observed during site walkover within close proximity to the site
Nearby river / surface water features – culverted, banks, flood plain. If visible, condition of watercourse	No notable watercourses within close proximity to the site.
Adjacent geotechnical features of note – cuttings, quarries, embankments, slopes (particularly if failed), major excavations, deep basements, sources of vibrations (railway or heavy machinery)	The railway is located along the south-eastern boundary of the site. It runs in a northeast southwest direction. Where the railway is adjacent with the site, it is located within a cutting and travels beneath the road to the south (Commercial Road).
Other features of note adjacent to site	

APPENDIX F

PUBLIC UTILITY SERVICE PLANS

Openreach (BT Apparatus)
Western Power Distribution (Electricity)
ESP Utilities Group (Gas)
Wales & West Utilities (Gas)
Virgin Media (Fibre optic cables)
Welsh Water Dwr Cymru (Water and drainage)



Warning: PDF designed for A3 colour print only with no page scaling.

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contact Us

Mapping Enquiries:		**General Enquiries:**	
All areas	0121 623 9780	All areas	0800 096 3080

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

Date Requested: 10/12/2021
Job Reference: 24138065
Site Location: 281934 208917
Requested by: Mr Justin Hughes
Your Scheme/Reference: Blaendulais
Exact Scales:
1:1250 Area or Circle dig site
1:500 Line dig site

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080

Overhead Line

- PL
- Service
- LV
- HV (11kV)
- HV (33kV)
- HV (66kV)
- HV (132kV)

Underground Cable

SURF Telecoms

Pilot Cables

Link Box

PME Earth

Pole Mounted Transformer

Site Location

Line/Area

Underground Earth

Ground Mounted Transformer

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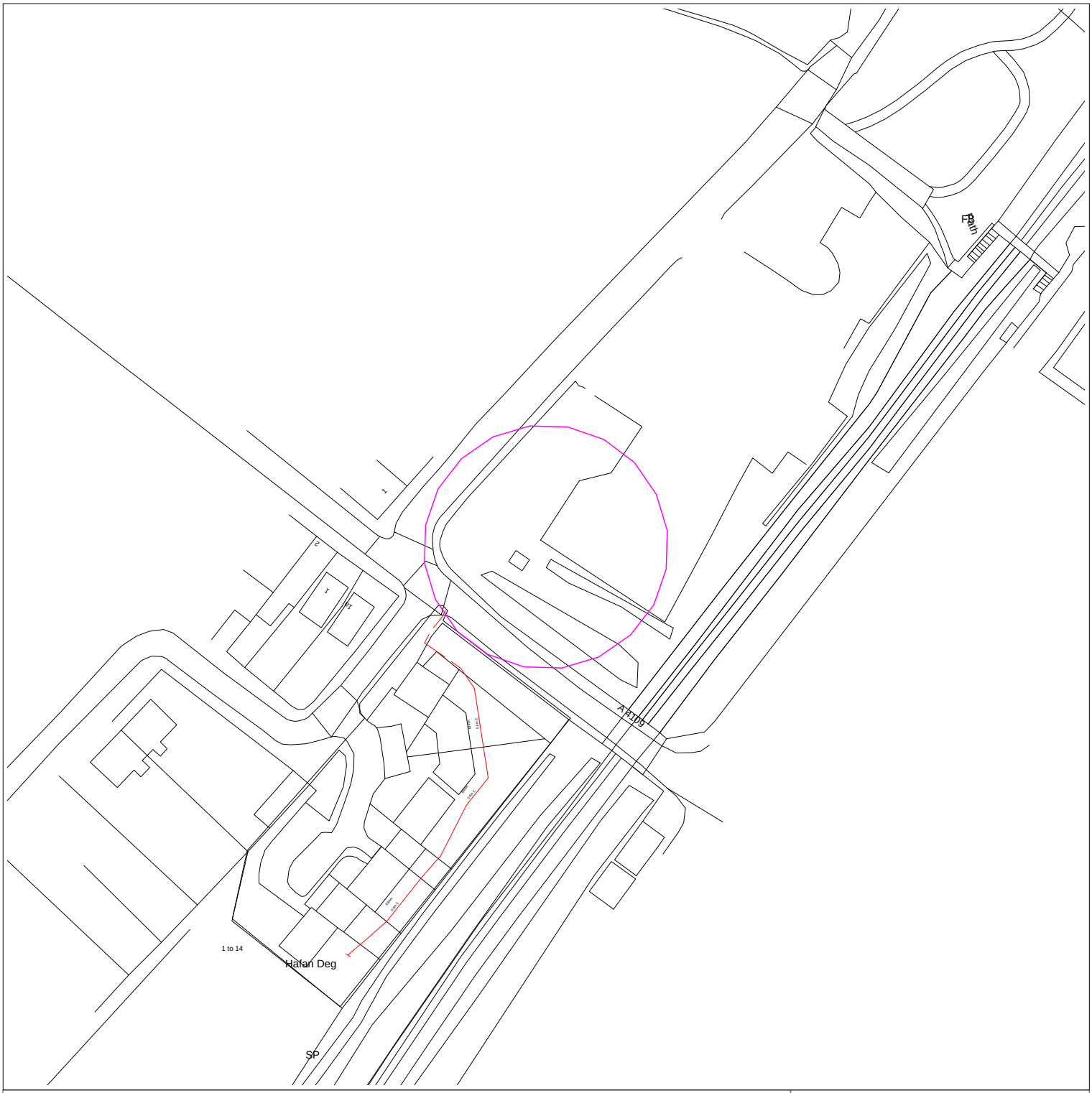

Date Requested: 10/12/2021

Requested by: Justin Hughes

Job Reference: 24138065

Company: Neath Port Talbot C.B.C.

Your Scheme/Reference: Blaendulais

Key for Mains & Service Pipework

Existing LP mains or services operating up to 75 millibar gauge

Existing MP mains or services operating between 75 millibar and 2 bar gauge

Existing IP mains or services operating between 2 bar and 7 bar gauge

Whilst ESP Utilities Group Ltd (ESP) try to ensure the asset information we provide is accurate, the information is provided Without Prejudice and ESP accept no liability for claims arising from any inaccuracy, omissions or errors contained in this response. The actual position of underground services must be verified and established on site before any mechanical plant is used. Authorities and contractors will be held liable for the full cost of repairs to ESP apparatus and all claims made against them by Third parties as a result of any interference or damage.

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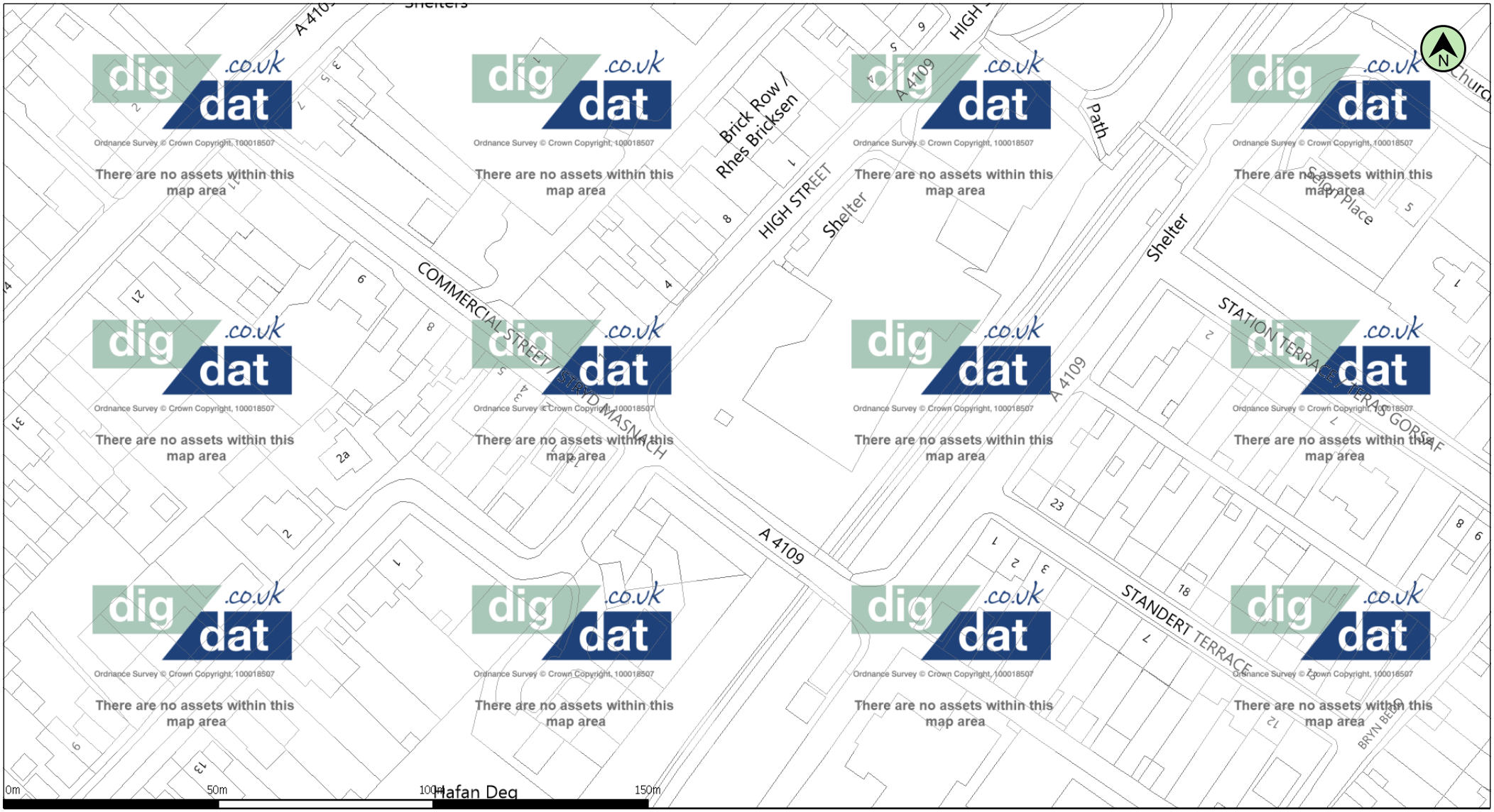
ESP Utilities Group Ltd
Bluebird House
Mole Business Park
Leatherhead
Surrey
KT22 7BA
Phone: 01372 587500
Email: PlantResponses@espug.com

Dig Sites:

Area Line

Approx scale on A4 paper: 1:1000
(excluding Overview map)



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Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the "Affected Postcodes.pdf", which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2021 Ordnance Survey 100019209.

Duct, Trench | Chamber / Pole | Cabinet

j.hughes@npt.gov.uk

Blaendulais

Company Address
Wales and West Utilities Ltd,
Wales and West House,
Spooner Close, Celtic,
Springs, Coedkernew,
Newport, NP10 8FZ

Our Ref: 24138065 Blaendulais

Friday, 10 December 2021

Justin Hughes
The Quays Brunel WayBaglan Energy Park
Neath
Neath Port Talbot
SA11 2GG

Dear Justin Hughes

Thank you for contacting us regarding Wales & West Utilities equipment at the above site.

According to our mains records Wales & West Utilities has no apparatus in the area of your enquiry. However Gas pipes owned by other GT's and also privately owned may be present in this area. Information with regard to such pipes should be obtained from the owners.

Safe digging practices, in accordance with HS(G)47, Avoiding Danger from underground services must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. Safe working procedures should be defined and practiced.

If you require advice in connection with your proposals please contact the relevant number below.

Yours sincerely,
WWU Dig Team

Gas Emergency Number:
In an emergency call 0800 111 999, 24 hours a day.

Mapping Enquiries:
If you have an enquiry relating to this letter or the attached map plan, please contact us using the following information:
Telephone 02920 278912
Email dig@wwutilities.co.uk

General Enquiries:
If you have a general enquiry, please call us on the following number
All areas 0800 912 29 99

LinesearchbeforeUdig:
If you have an enquiry relating to the use of the LinesearchbeforeUdig website please contact LinesearchbeforeUdig using the following information:
Telephone 0845 437 7365
Email enquiries@linesearchbeforeudig.co.uk
Website www.linesearchbeforeudig.co.uk

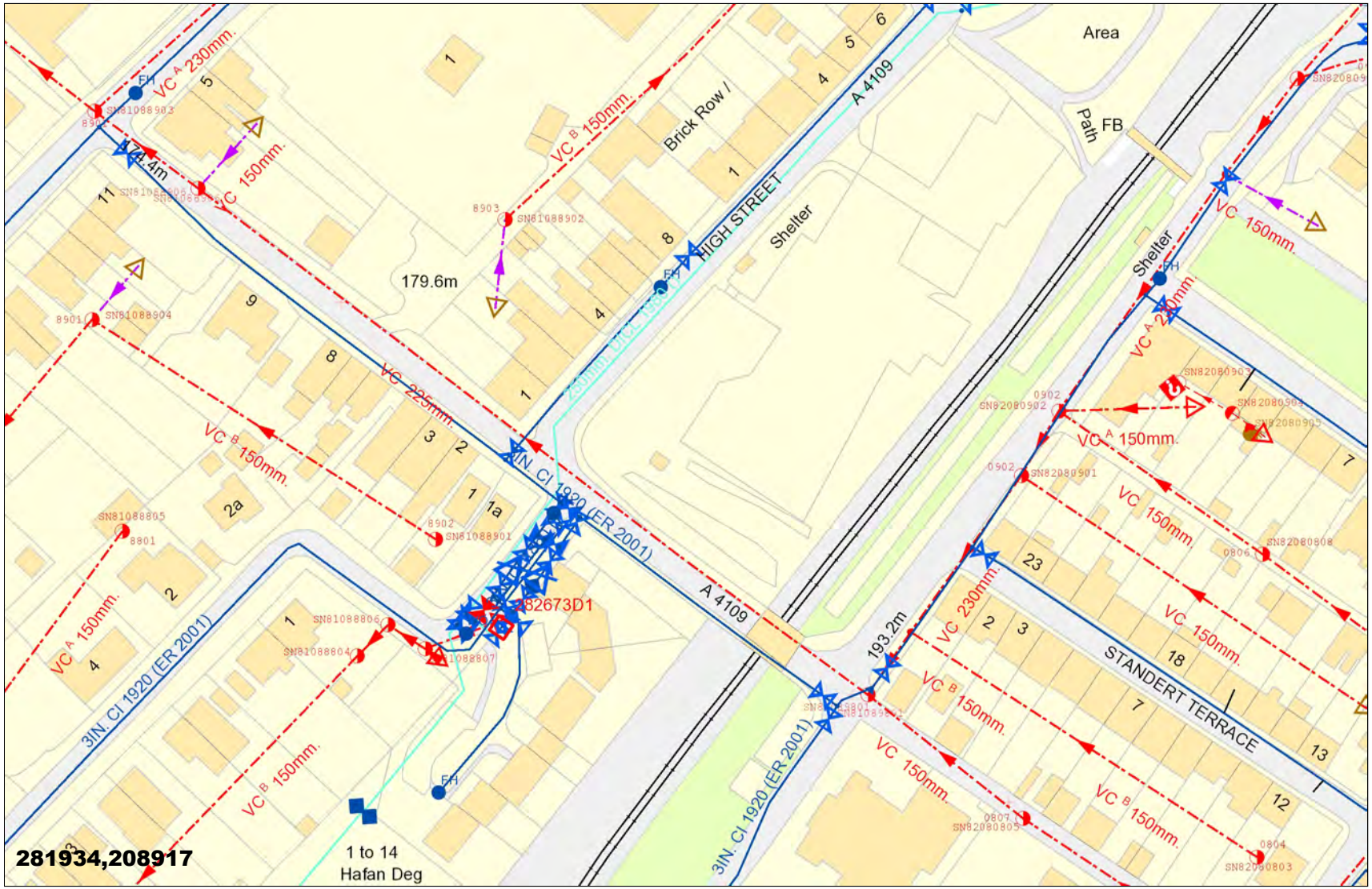
Safety Document: http://www.wwutilities.co.uk/services/dial-before-you-dig/can-you-dig-it/

Dwr Cymru
Welsh Water

Blaendulais

10/12/2021

Scale: 1: 1250



LEGEND

Clean Water

- Sluice Val
- Air Val, SINGLE
- Tap
- Pressure Reducing Valve
- Meter
- BULK Meter
- FH
- Cap
- Existing Main
- NON COMPANY

Sewerage External

- Foul
- Surface Water
- Combined
- Rising Main
- Private
- Treatment Works
- Pumping Station
- Special Purpose
- Unknown End
- Change, Combined Overflow
- Outfall, FOUL
- Lamp Hole, Foul
- Private Sewer Transfer
- Lateral Drain
- Inspection Chamber

Dwr Cymru Cyfyngedig ('the Company') gives this information as to the position of its underground apparatus by way of general guidance only and on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon In the event of excavations or other works made in the vicinity of the company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely on you. The information which is supplied hereby the company, is done so in accordance with statutory requirements of sections 198 and 199 f the water industry Act 1991 based upon the best Information available and in particular, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclosure the existence of a drain sewer or disposal main laid before 1 September 1989, or if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of this information us entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and the company's right to be compensated for any damage to its apparatus.

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

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Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be Asbestos Cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

WALKOVER SURVEY RECORD SHEET

Project: Blaendulais		Job No: 22181
Engineer: PL	Date: 15 August 2023	Weather: Dry
Contact: RHG		

Observations	Constructive comments must be made against each prompt	Further action required?

1. Site Details

Access	Access via A4109 to the west of the site.	
Boundaries and adjacent land uses	The site is bounded by trees/shrubs to the west and eastern boundaries. A contractors compound was noted to the northern boundary. To the east is a north south rail line. The west and south are bounded by the A4109. .	
Surface condition and safe walking	The entire surface is rough, with grass cover. A concrete road enters the site at the north western corner, heading towards the eastern boundary. Ther are mature trees in the eastern and western boundaries.	

2. Topography

Surface topography	Relatively flat, with no significant mounds or dips.	

Surface slopes and steep faces, details of land reshaping	Site is relatively flat.	
Evidence of subsidence	None	
Evidence of landslip, slides or failures.	None .	
Evidence of cuttings or toe slope excavations	None	
Evidence of imported soil, tipped material or rubbish	None	
Retaining walls/Slopes	None	

3. Geology

Surface Soils	Grass covered.	
Rock Outcrops	None	

4. Surface Water

Surface water features present	None	
Waterlogged ground	None	
Signs of flooding	None	
Are there any water loving plants?	None	
Signs of contamination	No visual or olfactory evidence.	

5. Groundwater

Groundwater conditions	None	

Evidence of shallow water table	None	

6. Vegetation

Areas and type of vegetation	Mostly grassed. Trees along western and eastern boundaries.	

Evidence of distress	None	
Tree / Hedgerow species and height	Trees up to 5m in height.	
Evidence of former trees	None	

7. Historic & Current Development

Known history of site	Site known to have been open rough, and at some time a Canolfan Centre has been built, and since demolished. No evidence.	

Previous structures	Large Canolfan and Lavs.	
Existing buildings/ structures	None	
Old foundations	None visible above ground	
Building dilapidation and distress	No buildings.	
Neighbouring structures under distress	None	
Underground services, manholes, drains, tanks or pits	Nothing visible.	

8. Additional Information

Visible surface Contamination	None	
Unusual odours, fumes or dust	None	
Spillages/ Accidents	None	
Waste Products	None	
Delivery and Storage	None	
Materials and processes currently carried out on site	None	

Plant or machinery on site	None	
Water supply	None	
Confined space or restricted working area	None	
Overhead cables	Not over site.	

9. Anecdotal Information

Local Knowledge / Interviews with residents/staff	None	
Further observations	Access will not be possible into tree line.	