ARUN DISTRICT COUNCIL Y/3/22/OUT



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Site Details:

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Client Ref: 13684
Report Ref: CAR1-8016762_LS_2_2
Grid Ref: 497825, 102703

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1975
Revised 1988
Edition N/A
Copyright 1988
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Surveyed 1975
Revised 1992
Edition N/A
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Site Details:

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Client Ref: 13684
Report Ref: CAR1-8016762_LS_2_2
Grid Ref: 497825, 102703

Map Name: National Grid
Map date: **1989-1994**
Scale: 1:2,500
Printed at: 1:2,500

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Revised N/A
Edition N/A
Copyright 1994
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Client Ref: 13684
Report Ref: CAR1-8016762_LS_2_2
Grid Ref: 497825, 102703

Map Name: National Grid

Map date: **1989-1994**

Scale: 1:2,500

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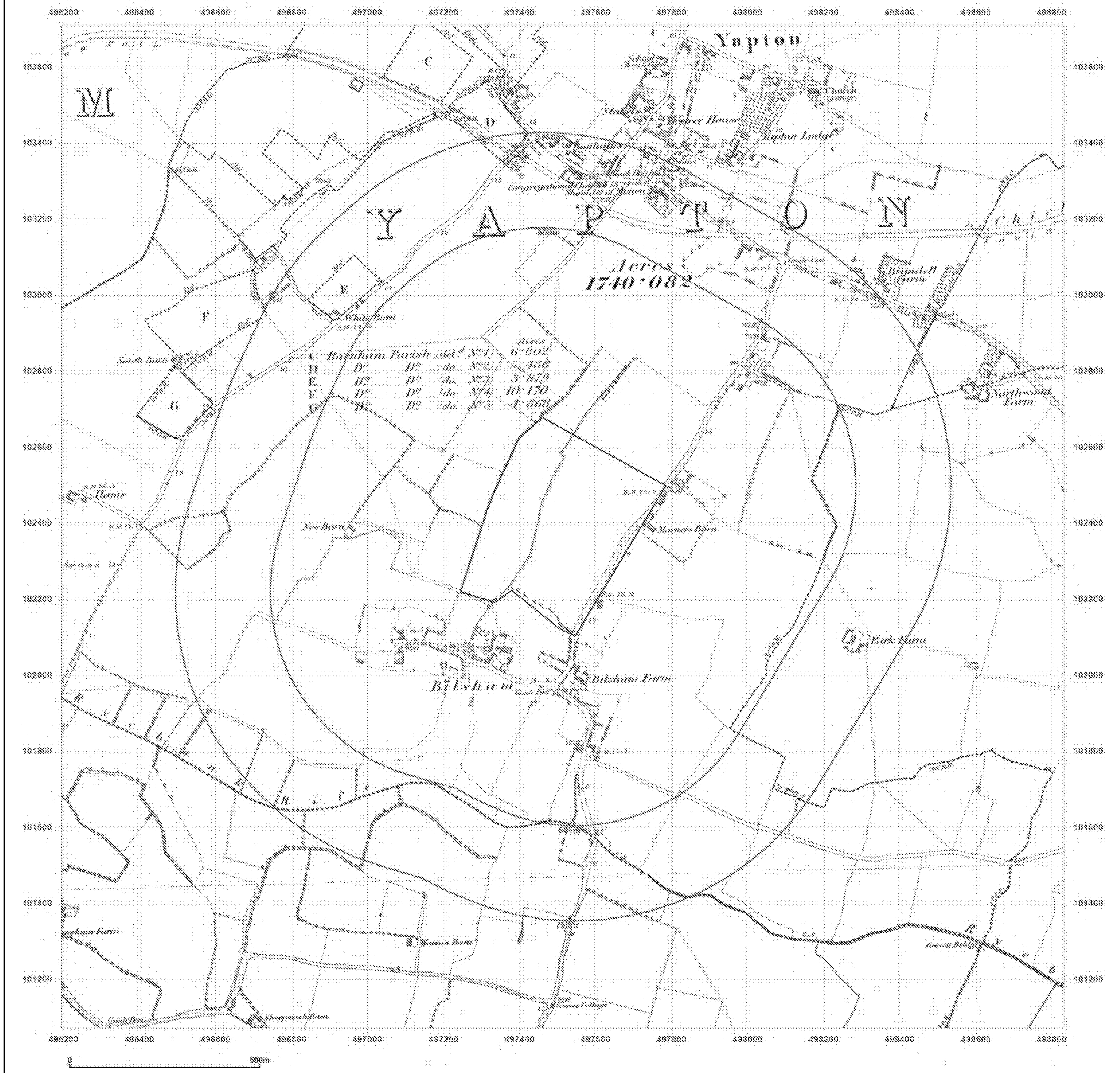
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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series

Map date: **1876**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
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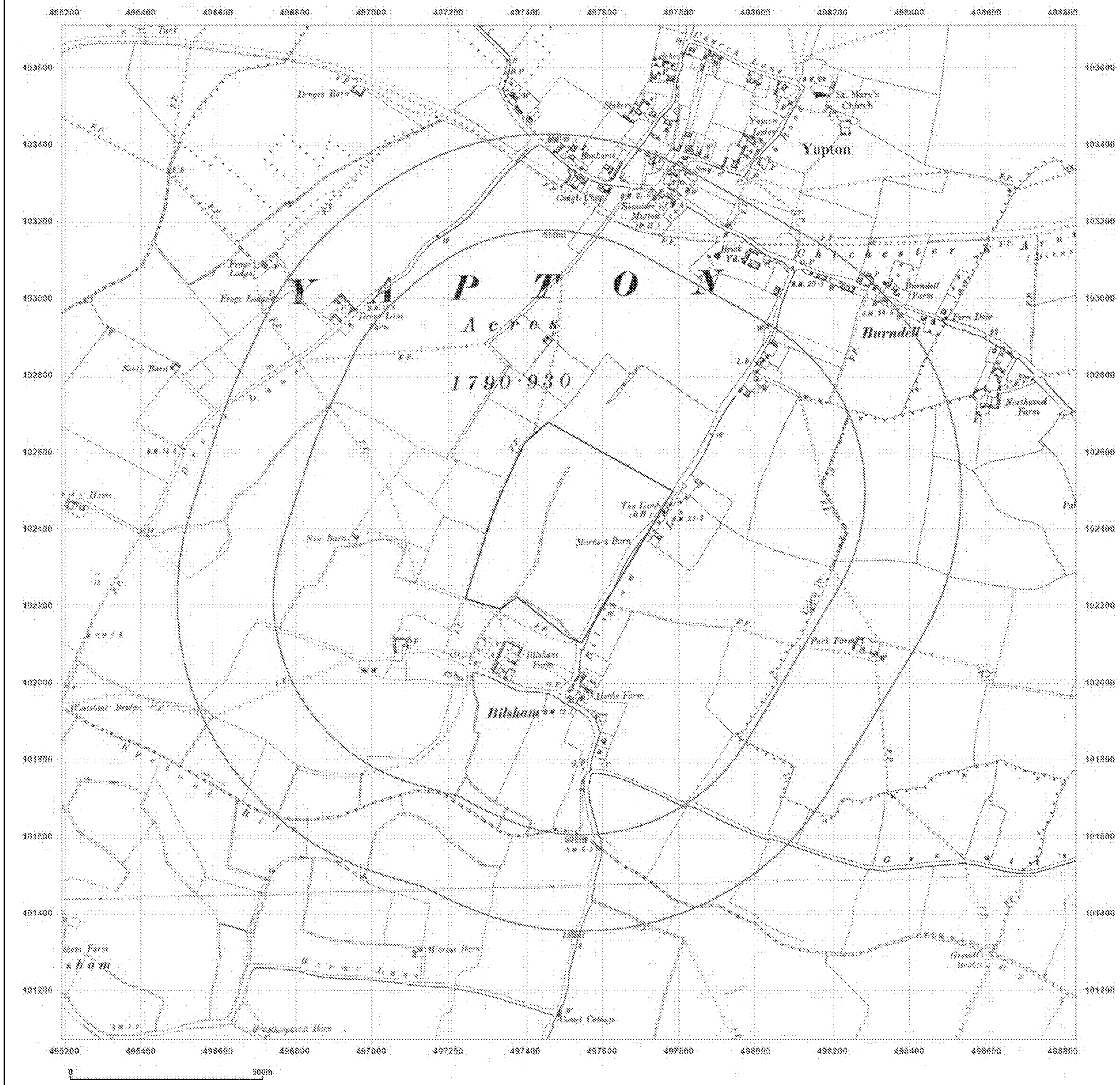
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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series

Map date: **1896**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1896
Edition N/A
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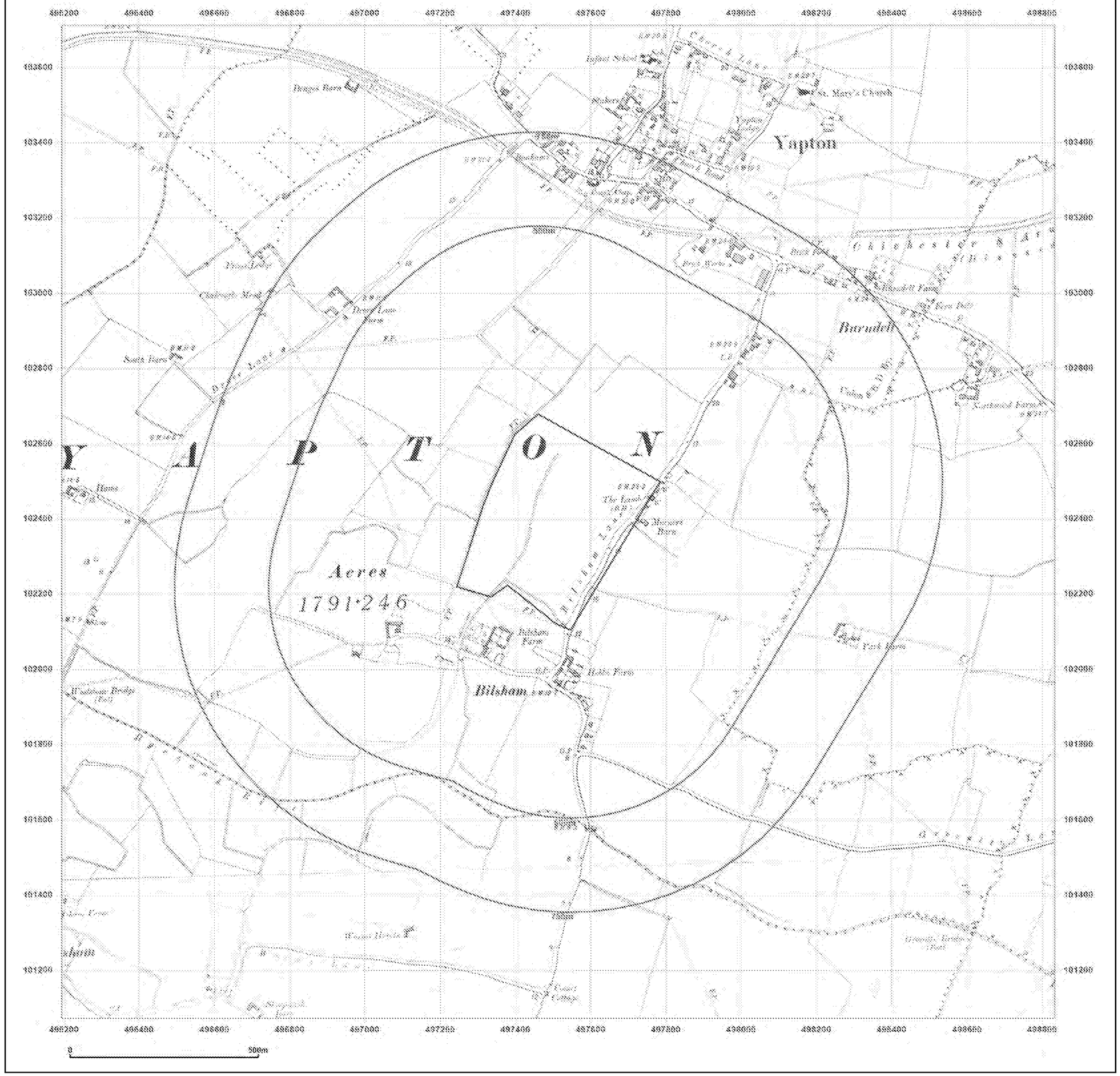
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Site Details:

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series

Map date: **1910**

Scale: 1:10,560

Printed at: 1:10,560

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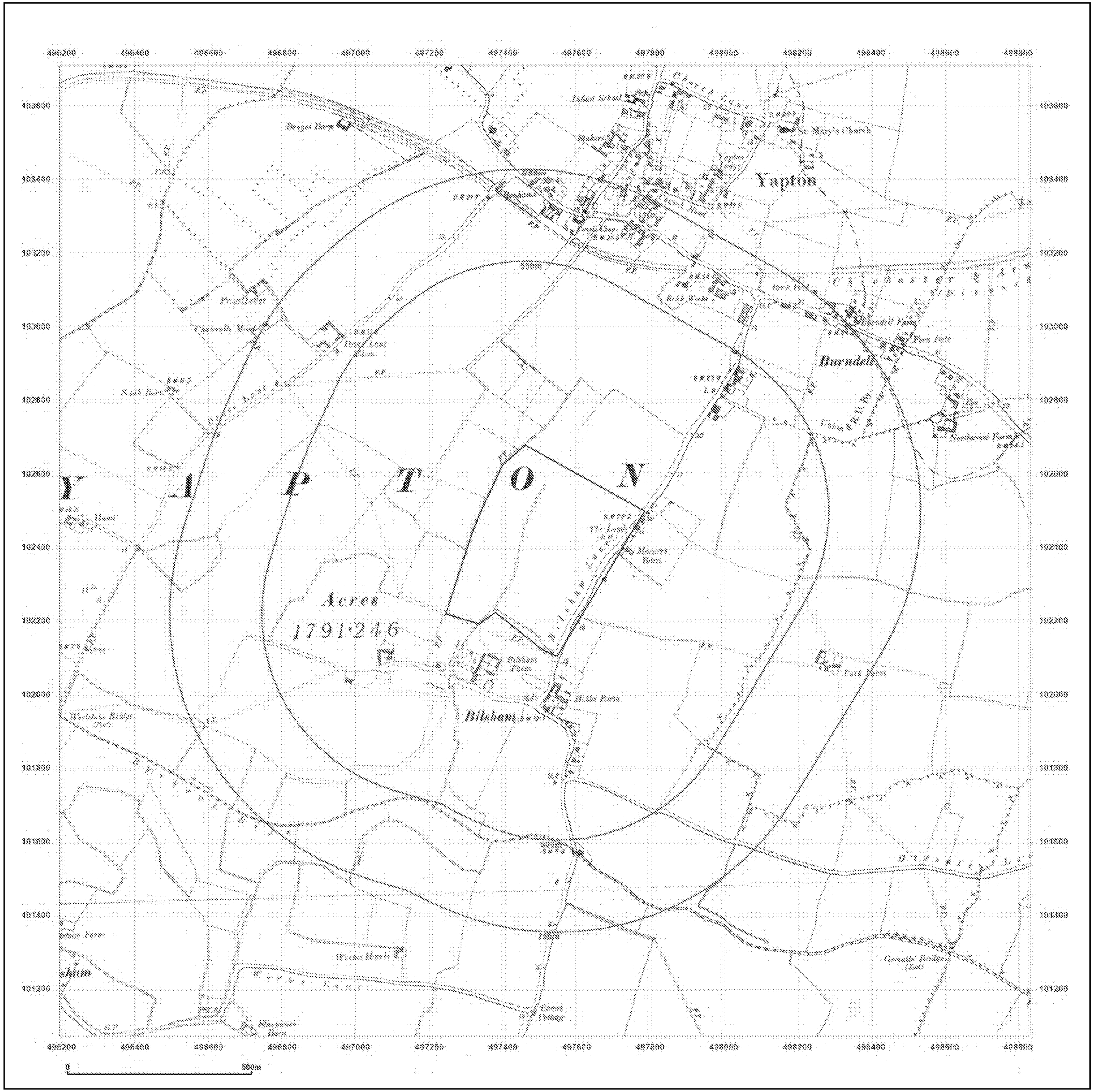
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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series

Map date: **1910**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1875
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1910
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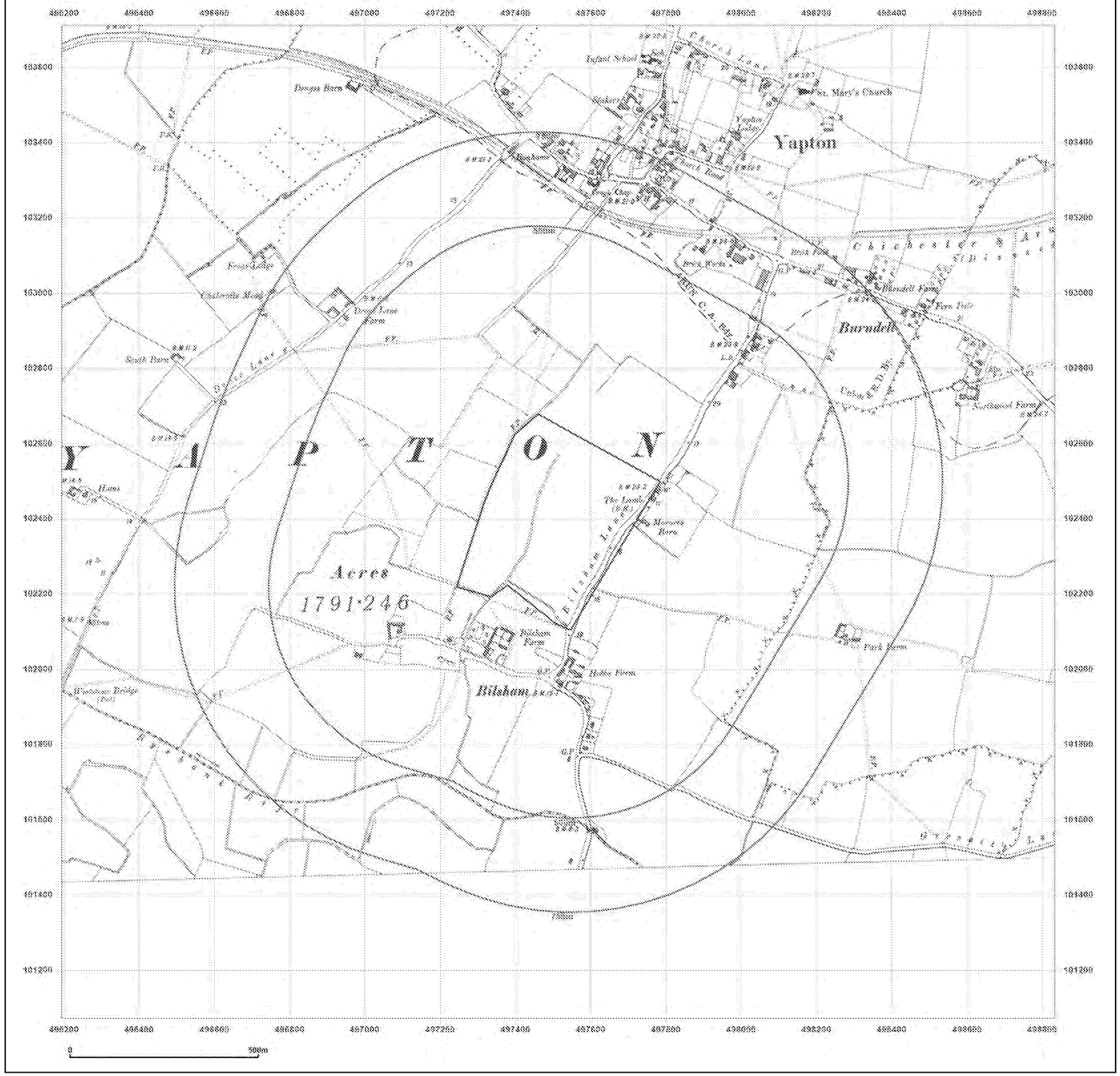
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Site Details:

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series
Map date: **1910**
Scale: 1:10,560
Printed at: 1:10,560

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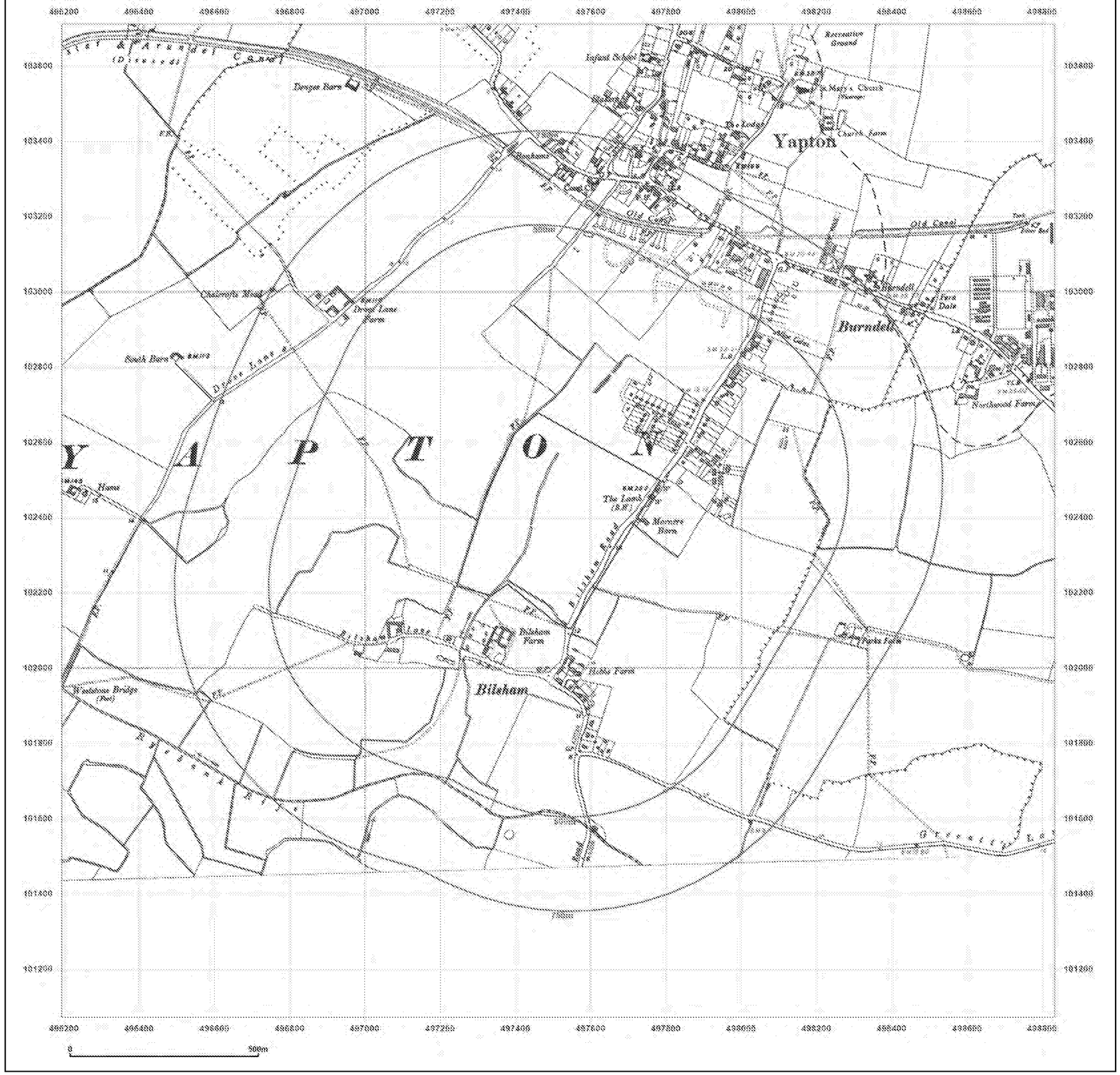
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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: County Series

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1875
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

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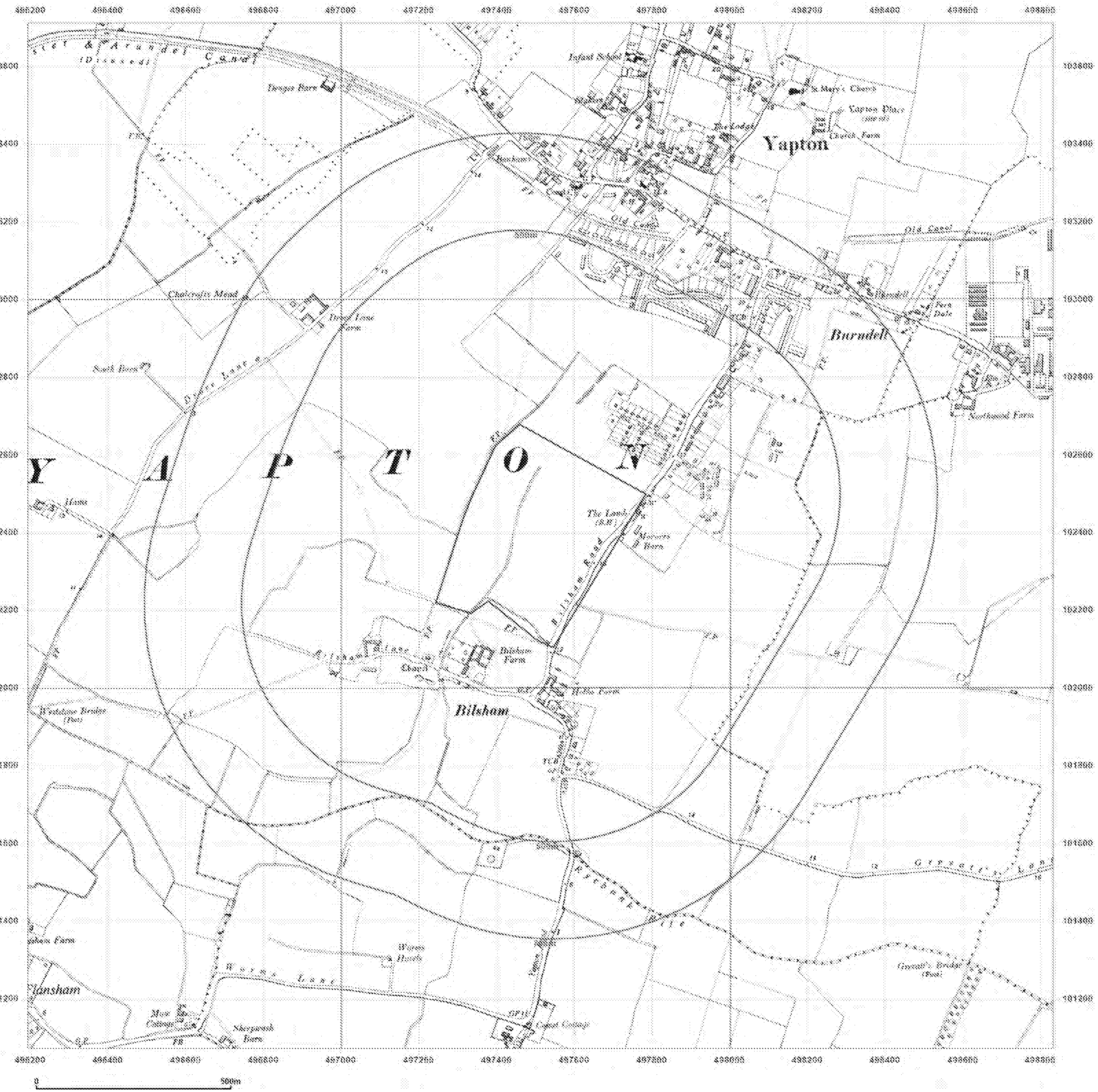
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Site Details:

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: Provisional

Map date: **1961**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised 1961
Edition N/A
Copyright N/A
Levelled N/A

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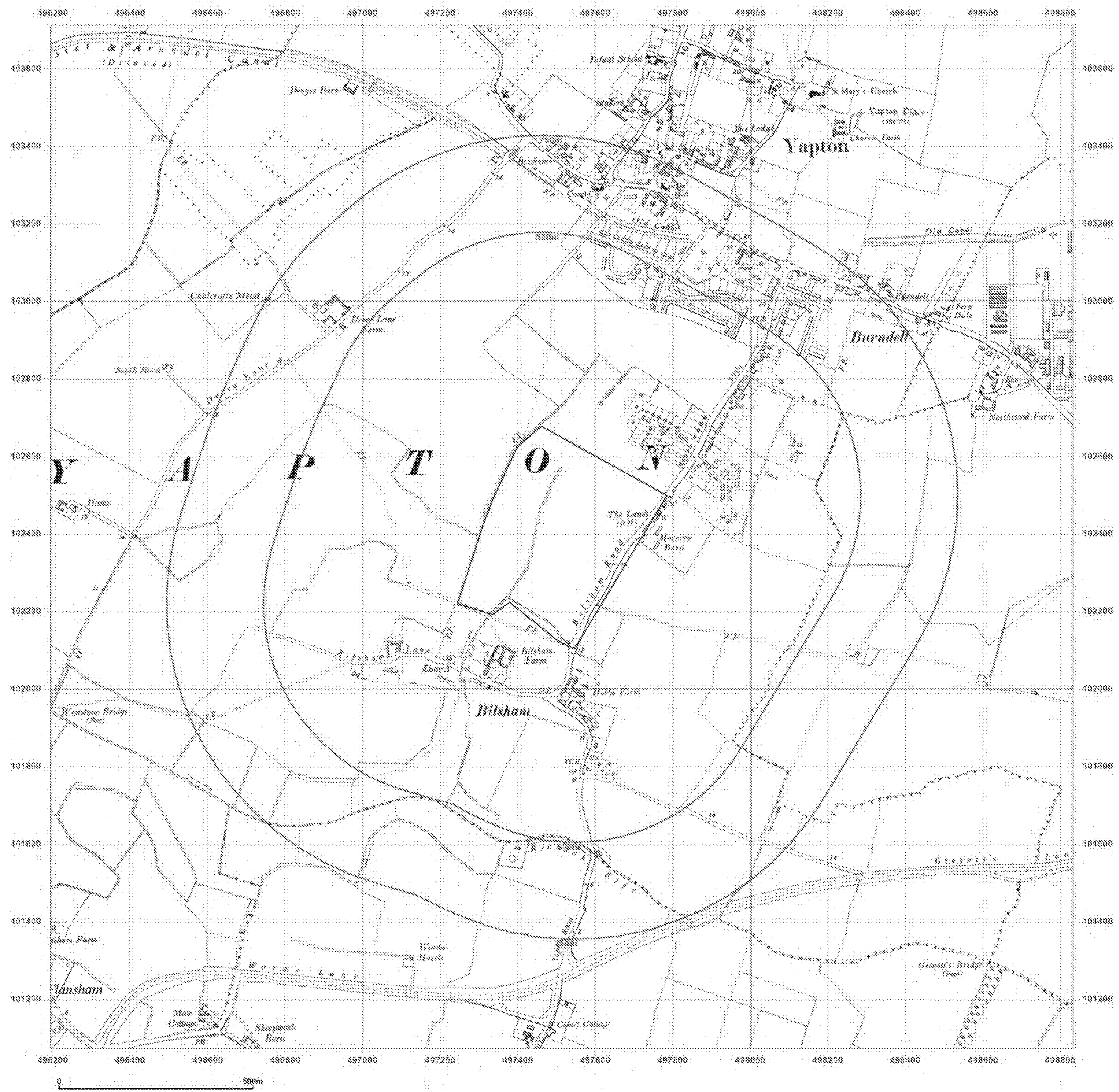
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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

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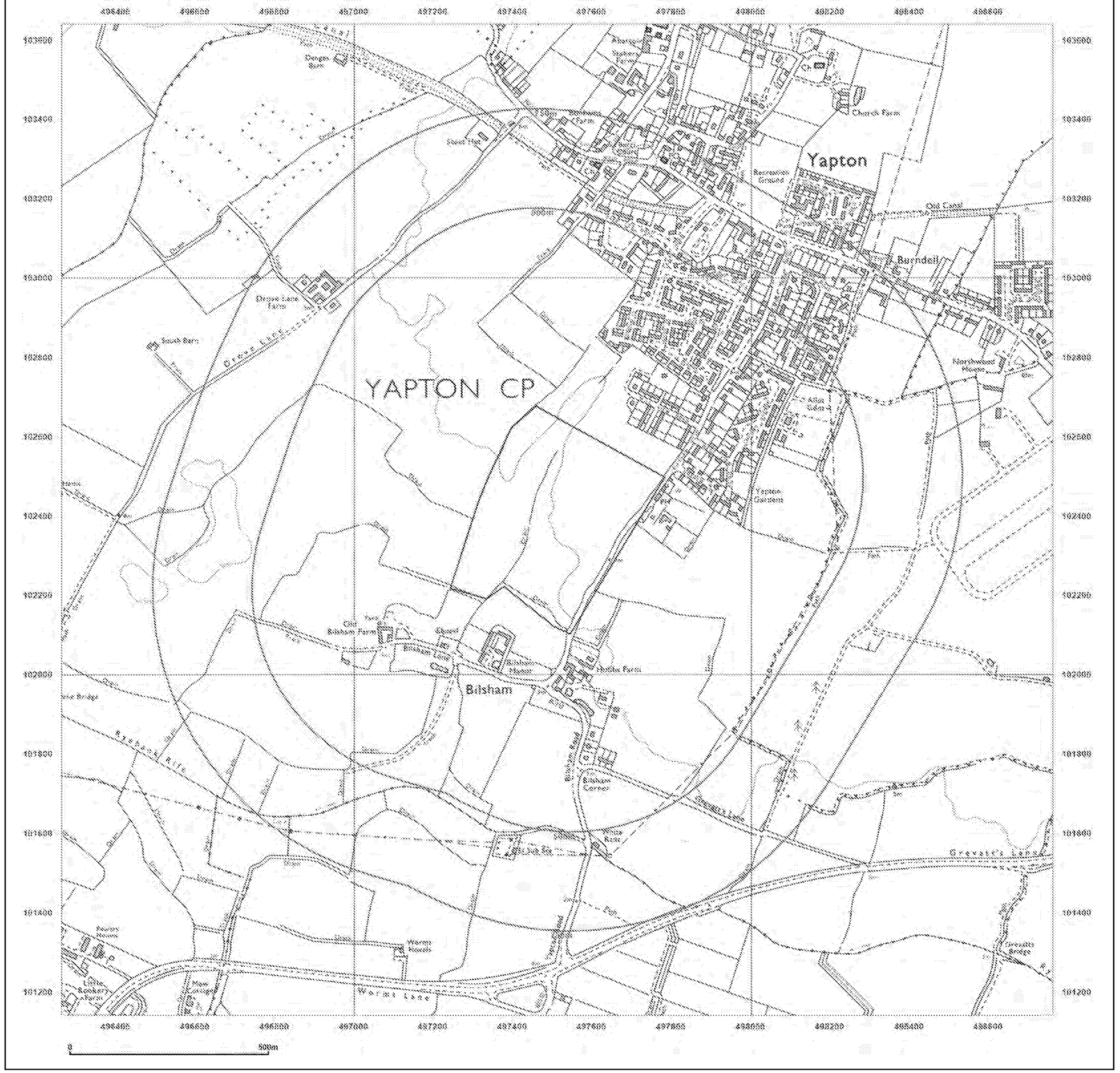
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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: National Grid
Map date: **1980**
Scale: 1:10,000
Printed at: 1:10,000

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Surveyed 1978
Revised 1978
Edition N/A
Copyright 1980
Levelled 1978

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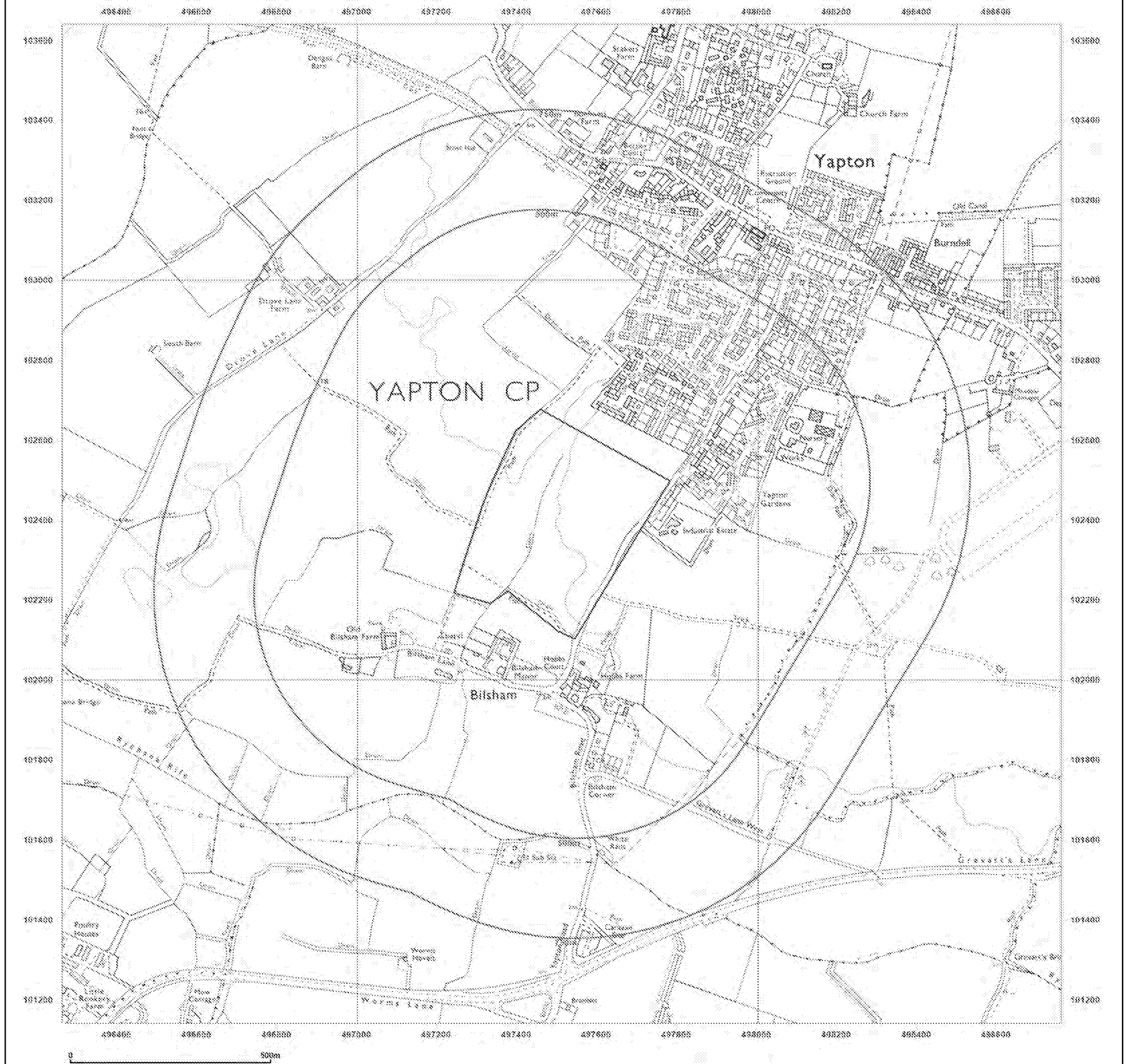
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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

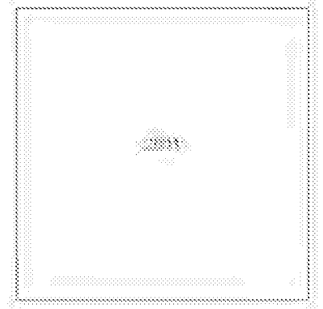
Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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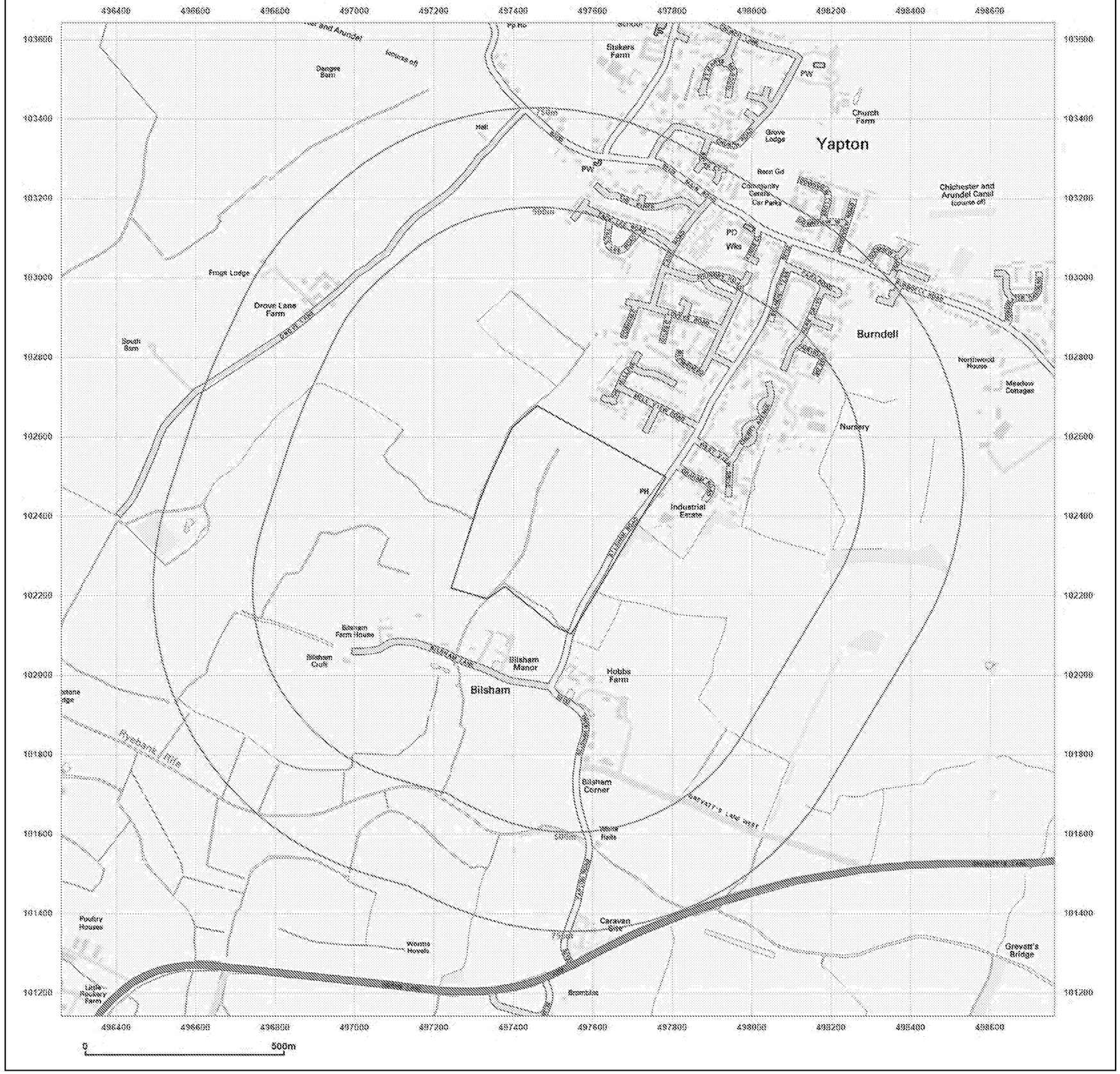
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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

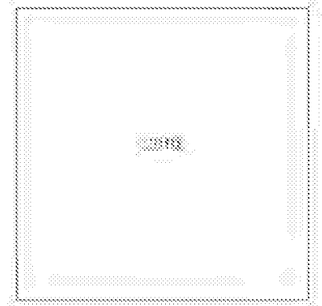
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Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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Site Details:

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Client Ref: 13684
Report Ref: CAR1-8016762
Grid Ref: 497513, 102392

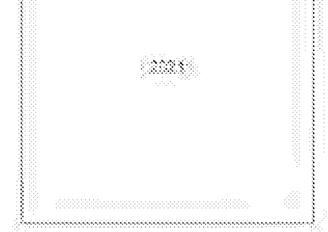
Map Name: National Grid

Map date: 2021

Scale: 1:10,000

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Enviro+Geo Insight

BILSHAM COTTAGE, GREVATTS LANE WEST, YAPTON, BN18 0LA

Order Details

Date: 06/07/2021

Your ref: 13684

Our Ref: CAR1-8016763

Client: CampbellReith

Site Details

Location: 497516 102428

Area: 17.31 ha

Authority: Arun District Council



Summary of findings p. 2

OS MasterMap site plan N/A: >10ha

Aerial image p. 8

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08444 159 000

ARUN DISTRICT COUNCIL Y/3/22/OUT

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
12	1.1	Historical industrial land uses	0	1	3	4	-
13	1.2	Historical tanks	0	0	3	2	-
13	1.3	Historical energy features	0	0	6	4	-
14	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	2	-
15	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
16	2.1	Historical industrial land uses	0	1	3	4	-
17	2.2	Historical tanks	0	0	4	3	-
17	2.3	Historical energy features	0	0	17	21	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	4	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
21	3.1	Active or recent landfill	0	0	0	0	-
21	3.2	Historical landfill (BGS records)	0	0	0	0	-
22	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
22	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
22	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22	3.7	Waste exemptions	0	0	11	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
24	4.1	Recent industrial land uses	0	0	8	-	-
25	4.2	Current or recent petrol stations	0	0	0	0	-
25	4.3	Electricity cables	0	0	0	0	-
25	4.4	Gas pipelines	0	0	0	0	-
26	4.5	Sites determined as Contaminated Land	0	0	0	0	-

ARUN DISTRICT COUNCIL Y/3/22/OUT

26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
26	4.7	Regulated explosive sites	0	0	0	0	-
26	4.8	Hazardous substance storage/usage	0	0	0	0	-
26	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
27	4.12	Radioactive Substance Authorisations	0	0	0	0	-
27	**4.13**	**Licensed Discharges to controlled waters**	0	1	3	3	-
28	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.15	Pollutant release to public sewer	0	0	0	0	-
29	4.16	List 1 Dangerous Substances	0	0	0	0	-
29	4.17	List 2 Dangerous Substances	0	0	0	0	-
29	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	1	0	-
30	4.19	Pollution inventory substances	0	0	0	0	-
30	4.20	Pollution inventory waste transfers	0	0	0	0	-
30	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
31	**5.1**	**Superficial aquifer**	Identified (within 500m)				
32	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
33	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
34	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
34	5.5	Groundwater vulnerability- local information	None (within 0m)				
35	**5.6**	**Groundwater abstractions**	0	0	0	0	9
37	**5.7**	**Surface water abstractions**	0	0	0	0	10
40	5.8	Potable abstractions	0	0	0	0	0
40	5.9	Source Protection Zones	0	0	0	0	-
40	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
41	**6.1**	**Water Network (OS MasterMap)**	10	3	22	-	-

44	6.2	Surface water features	1	5	15	-	-
45	6.3	WFD Surface water body catchments	1	-	-	-	-
45	6.4	WFD Surface water bodies	0	0	0	-	-
45	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 Sea (RoFRaS)	High (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	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	Identified (within 50m)				
50	7.7	Flood Zone 3	Identified (within 50m)				

Page	Section	Surface water flooding	
51	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
53	9.1	Groundwater flooding	High (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
55	10.7	Designated Ancient Woodland	0	0	0	0	0
55	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56	10.11	Green Belt	0	0	0	0	0
56	10.12	Proposed Ramsar sites	0	0	0	0	0

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56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	0
58	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	**11.4**	**Listed Buildings**	0	0	4	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	**12.1**	**Agricultural Land Classification**	Grade 1 (within 250m)				
65	12.2	Open Access Land	0	0	0	-	-
65	12.3	Tree Felling Licences	0	0	0	-	-
65	12.4	Environmental Stewardship Schemes	0	0	0	-	-
65	**12.5**	**Countryside Stewardship Schemes**	1	0	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
67	**13.1**	**Priority Habitat Inventory**	0	1	3	-	-
68	13.2	Habitat Networks	0	0	0	-	-
68	13.3	Open Mosaic Habitat	0	0	0	-	-
68	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
69	**14.1**	**10k Availability**	Identified (within 500m)				
70	14.2	Artificial and made ground (10k)	0	0	0	0	-
71	**14.3**	**Superficial geology (10k)**	1	0	1	0	-

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72	14.4	Landslip (10k)	0	0	0	0	-
73	14.5	Bedrock geology (10k)	1	0	0	0	-
74	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
75	15.1	50k Availability	Identified (within 500m)				
76	15.2	Artificial and made ground (50k)	0	0	0	0	-
76	15.3	Artificial ground permeability (50k)	0	0	-	-	-
77	15.4	Superficial geology (50k)	1	0	1	0	-
78	15.5	Superficial permeability (50k)	Identified (within 50m)				
78	15.6	Landslip (50k)	0	0	0	0	-
78	15.7	Landslip permeability (50k)	None (within 50m)				
79	15.8	Bedrock geology (50k)	1	0	0	0	-
80	15.9	Bedrock permeability (50k)	Identified (within 50m)				
80	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
81	16.1	BGS Boreholes	0	0	2	-	-
Page	Section	Natural ground subsidence					
82	17.1	Shrink swell clays	Low (within 50m)				
83	17.2	Running sands	Low (within 50m)				
84	17.3	Compressible deposits	Negligible (within 50m)				
85	17.4	Collapsible deposits	Low (within 50m)				
86	17.5	Landslides	Very low (within 50m)				
87	17.6	Ground dissolution of soluble rocks	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
89	18.1	Natural cavities	0	0	0	0	-
90	18.2	BritPits	0	0	0	0	-
90	18.3	Surface ground workings	0	0	12	-	-
91	18.4	Underground workings	0	0	0	0	0
91	18.5	Historical Mineral Planning Areas	0	0	0	0	-

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91	18.6	Non-coal mining	0	0	0	0	0
91	18.7	Mining cavities	0	0	0	0	0
91	18.8	JPB mining areas	None (within 0m)				
92	18.9	Coal mining	None (within 0m)				
92	18.10	Brine areas	None (within 0m)				
92	18.11	Gypsum areas	None (within 0m)				
92	18.12	Tin mining	None (within 0m)				
92	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
93	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
94	**20.1**	**BGS Estimated Background Soil Chemistry**	4	0	-	-	-
94	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
95	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
96	21.1	Underground railways (London)	0	0	0	-	-
96	21.2	Underground railways (Non-London)	0	0	0	-	-
96	21.3	Railway tunnels	0	0	0	-	-
96	21.4	Historical railway and tunnel features	0	0	0	-	-
96	21.5	Royal Mail tunnels	0	0	0	-	-
97	21.6	Historical railways	0	0	0	-	-
97	21.7	Railways	0	0	0	-	-
97	21.8	Crossrail 1	0	0	0	0	-
97	21.9	Crossrail 2	0	0	0	0	-
97	21.10	HS2	0	0	0	0	-

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Recent aerial photograph



Capture Date: 28/06/2018

Site Area: 17.31ha

ARUN DISTRICT COUNCIL Y/3/22/OUT

Recent site history - 2015 aerial photograph



Capture Date: 20/05/2015

Site Area: 17.31ha

ARUN DISTRICT COUNCIL Y/3/22/OUT

Recent site history - 2012 aerial photograph



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Capture Date: 13/09/2012

Site Area: 17.31ha

ARUN DISTRICT COUNCIL Y/3/22/OUT

Recent site history - 1999 aerial photograph



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Capture Date: 06/09/1999

Site Area: 17.31ha

ARUN DISTRICT COUNCIL Y/3/22/OUT

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	8

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 12**

ID	Location	Land use	Dates present	Group ID
1	1m SE	Industrial Estate	1991	1866232

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ID	Location	Land use	Dates present	Group ID
A	90m SW	Unspecified Tanks	1876	1871145
C	195m SW	Unspecified Tank	1978	1928478
C	195m SW	Unspecified Tank	1991	1956600
D	290m E	Nursery	1991	1868117
D	296m E	Unspecified Works	1991	1860836
B	427m NE	Unspecified Workshop	1978	1872183
B	460m SE	Aerodrome	1978	2365493

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	5

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 12**

ID	Location	Land use	Dates present	Group ID
A	109m S	Unspecified Tank	1912	309024
C	195m SW	Tanks	1974	325569
C	197m SW	Tanks	1989 - 1992	323827
D	355m E	Unspecified Tank	1994	326968
D	356m E	Unspecified Tank	1991	324154

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	10

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

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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 12**

ID	Location	Land use	Dates present	Group ID
2	54m NE	Gas Valve House	1989 - 1992	200206
3	89m E	Electricity Substation	1989 - 1992	207274
B	157m SW	Electricity Substation	1974 - 1982	199692
B	157m SW	Electricity Substation	-	187540
4	178m NE	Electricity Substation	1989 - 1992	208185
5	240m NE	Electricity Substation	1974 - 1992	205578
F	359m NE	Electricity Substation	1989 - 1992	201277
F	362m NE	Electricity Substation	1974	207004
6	421m NE	Electricity Substation	1974 - 1995	208501
7	426m NE	Electricity Substation	1973 - 1994	203273

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 12**

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ID	Location	Land use	Dates present	Group ID
E	300m NE	Garage	1989 - 1992	65098
E	309m NE	Garage	1974	62178

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m 8

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 16**

ID	Location	Land Use	Date	Group ID
1	1m SE	Industrial Estate	1991	1866232
C	90m SW	Unspecified Tanks	1876	1871145
F	195m SW	Unspecified Tank	1991	1956600

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ID	Location	Land Use	Date	Group ID
F	195m SW	Unspecified Tank	1978	1928478
H	290m E	Nursery	1991	1868117
H	296m E	Unspecified Works	1991	1860836
2	427m NE	Unspecified Workshop	1978	1872183
3	460m SE	Aerodrome	1978	2365493

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	7

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 16**

ID	Location	Land Use	Date	Group ID
C	109m S	Unspecified Tank	1912	309024
F	195m SW	Tanks	1974	325569
F	197m SW	Tanks	1989	323827
F	197m SW	Tanks	1992	323827
H	355m E	Unspecified Tank	1994	326968
H	355m E	Unspecified Tank	1994	326968
H	356m E	Unspecified Tank	1991	324154

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	38

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'.

Features are displayed on the Past land use - un-grouped map on **page 16**

ARUN DISTRICT COUNCIL Y/3/22/OUT

ID	Location	Land Use	Date	Group ID
A	54m NE	Gas Valve House	1989	200206
A	54m NE	Gas Valve House	1989	200206
A	54m NE	Gas Valve House	1992	200206
B	89m E	Electricity Substation	1989	207274
B	89m E	Electricity Substation	1989	207274
B	89m E	Electricity Substation	1992	207274
D	157m SW	Electricity Substation	1974	199692
D	157m SW	Electricity Substation	-	187540
D	159m SW	Electricity Substation	1983	199692
D	159m SW	Electricity Substation	1975	199692
E	178m NE	Electricity Substation	1989	208185
E	178m NE	Electricity Substation	1989	208185
E	178m NE	Electricity Substation	1992	208185
G	240m NE	Electricity Substation	1989	205578
G	240m NE	Electricity Substation	1989	205578
G	240m NE	Electricity Substation	1992	205578
G	242m NE	Electricity Substation	1974	205578
J	359m NE	Electricity Substation	1989	201277
J	359m NE	Electricity Substation	1989	201277
J	359m NE	Electricity Substation	1992	201277
J	362m NE	Electricity Substation	1974	207004
K	421m NE	Electricity Substation	1995	208501
K	421m NE	Electricity Substation	1995	208501
K	421m NE	Electricity Substation	1974	208501
K	422m NE	Electricity Substation	1982	208501
K	422m NE	Electricity Substation	1988	208501
K	422m NE	Electricity Substation	1988	208501
K	422m NE	Electricity Substation	1989	208501

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ID	Location	Land Use	Date	Group ID
K	422m NE	Electricity Substation	1989	208501
K	422m NE	Electricity Substation	1992	208501
K	422m NE	Electricity Substation	1992	208501
L	426m NE	Electricity Substation	1983	203273
L	426m NE	Electricity Substation	1973	203273
L	426m NE	Electricity Substation	1984	203273
L	426m NE	Electricity Substation	1987	203273
L	426m NE	Electricity Substation	1991	203273
L	426m NE	Electricity Substation	1994	203273
L	427m NE	Electricity Substation	1994	203273

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	4

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 16**

ID	Location	Land Use	Date	Group ID
I	300m NE	Garage	1989	65098
I	300m NE	Garage	1989	65098
I	300m NE	Garage	1992	65098

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ID	Location	Land Use	Date	Group ID
1	309m NE	Garage	1974	62178

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

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	0

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

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	13

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 21**

ARUN DISTRICT COUNCIL Y/3/22/OUT

ID	Location	Site	Reference	Category	Sub-Category	Description
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX218435	Using waste exemption	On a farm	Use of waste in construction
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX218435	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX218435	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX218435	Using waste exemption	On a farm	Incorporation of ash into soil
A	91m S	Bilsham Farm, Bilsham Lane, Yapton, BN18 0JX	WEX218714	Using waste exemption	On a farm	Use of waste in construction
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX073234	Using waste exemption	On a farm	Use of waste in construction
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX073234	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX073234	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
A	91m S	BILSHAM BARN, BILSHAM LANE, YAPTON, ARUNDEL, BN18 0JX	WEX073224	Using waste exemption	On a farm	Incorporation of ash into soil
1	146m S	Bilsham Farm, Bilsham Lane, Yapton, BN18 0JX	WEX073440	Using waste exemption	On a farm	Use of waste in construction
2	189m SE	LITTLE MEADOW, BILSHAM ROAD, YAPTON, ARUNDEL, BN18 0JY	WEX067812	Using waste exemption	Not on a farm	Use of waste in construction
B	335m NE	CEDAR LODGE, CINDERS LANE, YAPTON, ARUNDEL, BN18 0JJ	WEX028123	Using waste exemption	Not on a farm	Use of waste in construction
B	335m NE	CEDAR LODGE, CINDERS LANE, YAPTON, ARUNDEL, BN18 0JJ	WEX005589	Using waste exemption	Not 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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m **8**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Company	Address	Activity	Category
2	98m E	Electricity Sub Station	West Sussex, BN18	Electrical Features	Infrastructure and Facilities
4	163m SW	Electricity Sub Station	West Sussex, BN18	Electrical Features	Infrastructure and Facilities
5	175m SW	Tank	West Sussex, BN18	Tanks (Generic)	Industrial Features

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ID	Location	Company	Address	Activity	Category
6	187m NE	Electricity Sub Station	West Sussex, BN18	Electrical Features	Infrastructure and Facilities
7	200m NE	House Clearance & Property Repair	Bolero, Bilsham Road, Yapton, Arundel, West Sussex, BN18 0JN	Clearance and Salvage Dealers	Recycling Services
8	207m SE	Hyams Autolift	Oaktrees, Bilsham Road, Yapton, Arundel, West Sussex, BN18 0JY	Distribution and Haulage	Transport, Storage and Delivery
8	227m SE	Hyams Auto Lift	Bilsham Road, Yapton, Arundel, West Sussex, BN18 0JY	Lifting and Handling Equipment	Industrial Products
9	246m NE	Electricity Sub Station	West Sussex, BN18	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

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.

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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.

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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	7

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 24**

ID	Location	Address	Details	
A	49m SE	BILSHAM ROAD	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01639 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/10/1967 Effective Date: 06/10/1967 Revocation Date: 01/07/1991
A	85m SE	BILSHAM ROAD	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01639 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/10/1967 Effective Date: 06/10/1967 Revocation Date: 01/07/1991

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ID	Location	Address	Details	
3	140m SE	BILSHAM ROAD	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01639 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/10/1967 Effective Date: 06/10/1967 Revocation Date: 01/07/1991
8	227m SW	TEMPORARY DWELLING, BILSHAM LANE, TEMPORARY DWELLING BILSHAM LANE, BILSHAM, YAPTON	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P03477 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 31/03/1997
10	255m E	RESIDENTIAL DEVELOPMENT, OFF CHERRY LANE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S02208 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 21/08/1973 Effective Date: 21/08/1973 Revocation Date: 31/03/1997
11	365m NE	RESIDENTIAL DEVELOPMENT, OFF CHERRY LANE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S02208 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 21/08/1973 Effective Date: 21/08/1973 Revocation Date: 31/03/1997
12	410m NE	NEW ESTATE AT BELMONT ESTATE, YAPTON	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S02741 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 01/07/1991 Effective Date: 01/07/1991 Revocation Date: 31/03/1997

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.

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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	1

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 24**

ID	Location	Details	
1	66m SE	Incident Date: 18/05/2002 Incident Identification: 79680 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

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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.

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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	1

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 31**

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.

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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 32**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

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Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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 33**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	On site	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Medium Aquifer type: Principal 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	1

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**100.0%**

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.

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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	9

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 35**

ARUN DISTRICT COUNCIL Y/3/22/OUT

ID	Location	Details	
-	925m SW	Status: Historical Licence No: 10/41/541002 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: POINT 2 AT SHRIPNEY FARM & FLANSHAM FARM Data Type: Point Name: The Donald Langmead Partnership Easting: 496440 Northing: 101760	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 21/03/2001 Version End Date: -
5	945m SW	Status: Historical Licence No: 10/41/541002 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: POINT 3 AT SHRIPNEY FARM & FLANSHAM FARM Data Type: Point Name: The Donald Langmead Partnership Easting: 496680 Northing: 101460	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 21/03/2001 Version End Date: -
-	1212m N	Status: Historical Licence No: 10/41/411007 Details: Horticultural Watering Direct Source: Southern Region Groundwater Point: THE STREDDLES, NORTH END ROAD, YAPTON Data Type: Point Name: Clay Esq Easting: 497840 Northing: 103830	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/07/1979 Version End Date: -
-	1394m SW	Status: Historical Licence No: 10/41/542002 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: AT FLANSHAM FARM,FLANSHAM Data Type: Point Name: The Donald Langmead Partnership Easting: 496080 Northing: 101450	Annual Volume (m^3): 9092 Max Daily Volume (m^3): 27.2 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/12/1992 Version End Date: -
-	1412m NW	Status: Historical Licence No: 10/41/542008 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: POINT A AT TILE BARN FARM,BARNHAM Data Type: Point Name: Lonsdale Easting: 496460 Northing: 103690	Annual Volume (m^3): 25003 Max Daily Volume (m^3): 204.5 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 17/01/2003 Version End Date: -

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ID	Location	Details	
-	1748m NE	Status: Active Licence No: 10/41/412007 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: WICKS FARM, FORD Data Type: Point Name: Keith Langmead Ltd Easting: 498790 Northing: 103930	Annual Volume (m^3): 15,000 Max Daily Volume (m^3): 120 Original Application No: - Original Start Date: 30/05/1989 Expiry Date: - Issue No: 101 Version Start Date: 31/03/2016 Version End Date: -
-	1888m SE	Status: Active Licence No: 10/41/542009 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: POINT A AT NEW BARN, CLIMPING Data Type: Point Name: Baird Easting: 499260 Northing: 101290	Annual Volume (m^3): 36,368 Max Daily Volume (m^3): 136.30 Original Application No: - Original Start Date: 21/03/1977 Expiry Date: - Issue No: 100 Version Start Date: 16/04/2019 Version End Date: -
-	1933m N	Status: Active Licence No: 10/41/542208 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: POINT B, LAKE LANE,BARNHAM Data Type: Point Name: The Green House Sussex Holdings Ltd Easting: 497110 Northing: 104580	Annual Volume (m^3): 100,000 Max Daily Volume (m^3): 545 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 03/12/2020 Version End Date: -
-	1959m NE	Status: Historical Licence No: 27/198 Details: Process Water Direct Source: Southern Region Groundwater Point: FORD INDUSTRIAL ESTATE, ARUNDEL Data Type: Point Name: Tarmac Ltd Easting: 499530 Northing: 103390	Annual Volume (m^3): 105000 Max Daily Volume (m^3): 351 Original Application No: - Original Start Date: 04/01/2001 Expiry Date: - Issue No: 1 Version Start Date: 04/01/2001 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	10

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 35**

ID	Location	Details	
1	574m S	Status: Historical Licence No: 10/41/411016 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE - NEW REACH Data Type: Line Name: James D Baird (Home Farm) Ltd Easting: 496190 Northing: 101940	Annual Volume (m^3): 27272 Max Daily Volume (m^3): 2182 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 08/06/2009 Version End Date: -
-	798m SE	Status: Historical Licence No: 10/41/542011 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: POINTS C&D AT RYEBANK RIFE,MIDDLETON Data Type: Line Name: Gibbs Easting: 498000 Northing: 101370	Annual Volume (m^3): 4550 Max Daily Volume (m^3): 45 Original Application No: - Original Start Date: 19/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2016 Version End Date: -
-	863m SE	Status: Historical Licence No: 10/41/542011 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: POINTS A&B AT RYEBANK RIFE,MIDDLETON Data Type: Line Name: Gibbs Easting: 497800 Northing: 101250	Annual Volume (m^3): 4550 Max Daily Volume (m^3): 45 Original Application No: - Original Start Date: 19/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2016 Version End Date: -
-	937m SW	Status: Historical Licence No: 27/209 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE, POINT A - BILSHAM Data Type: Point Name: Langmead Farms Ltd Easting: 496390 Northing: 101830	Annual Volume (m^3): 250402 Max Daily Volume (m^3): 7800 Original Application No: - Original Start Date: 18/12/2007 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 16/06/2009 Version End Date: -
-	956m SW	Status: Active Licence No: 27/209/R01 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE, POINT A - BILSHAM Data Type: Point Name: Langmead Farms Ltd Easting: 496359 Northing: 101855	Annual Volume (m^3): 250,402 Max Daily Volume (m^3): 7,800 Original Application No: - Original Start Date: 01/04/2016 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/04/2020 Version End Date: -

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ID	Location	Details	
-	1340m SE	Status: Historical Licence No: 10/41/411016 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE AND ELMER RIFE Data Type: Line Name: Baird Easting: 501710 Northing: 102210	Annual Volume (m^3): 27272 Max Daily Volume (m^3): 1091 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 08/12/2005 Version End Date: -
-	1348m SE	Status: Active Licence No: 10/41/411016 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE Data Type: Line Name: James D Baird (Home Farm) Ltd Easting: 501720 Northing: 102160	Annual Volume (m^3): 27,272 Max Daily Volume (m^3): 1,091 Original Application No: - Original Start Date: 13/06/1967 Expiry Date: - Issue No: 101 Version Start Date: 16/04/2019 Version End Date: -
-	1407m W	Status: Active Licence No: SO/041/0024/005 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: RYEBANK RIFE - STAKERS FARM, YAPTON Data Type: Point Name: Langmead Farms Ltd Easting: 495837 Northing: 102285	Annual Volume (m^3): 295,053 Max Daily Volume (m^3): 7,800 Original Application No: - Original Start Date: 23/06/2011 Expiry Date: 21/03/2028 Issue No: 1 Version Start Date: 16/04/2019 Version End Date: -
-	1804m N	Status: Historical Licence No: 10/41/412002 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: TODHURST RIFE AT YAPTON LANE, WALBERTON Data Type: Line Name: Fresh Acres Nurseries Ltd Easting: 497730 Northing: 104580	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 29/06/1908 Version End Date: -
-	1953m SE	Status: Active Licence No: 10/41/411016 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: ELMER RIFE Data Type: Line Name: James D Baird (Home Farm) Ltd Easting: 499270 Northing: 101180	Annual Volume (m^3): 27,272 Max Daily Volume (m^3): 1,091 Original Application No: - Original Start Date: 13/06/1967 Expiry Date: - Issue No: 101 Version Start Date: 16/04/2019 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.

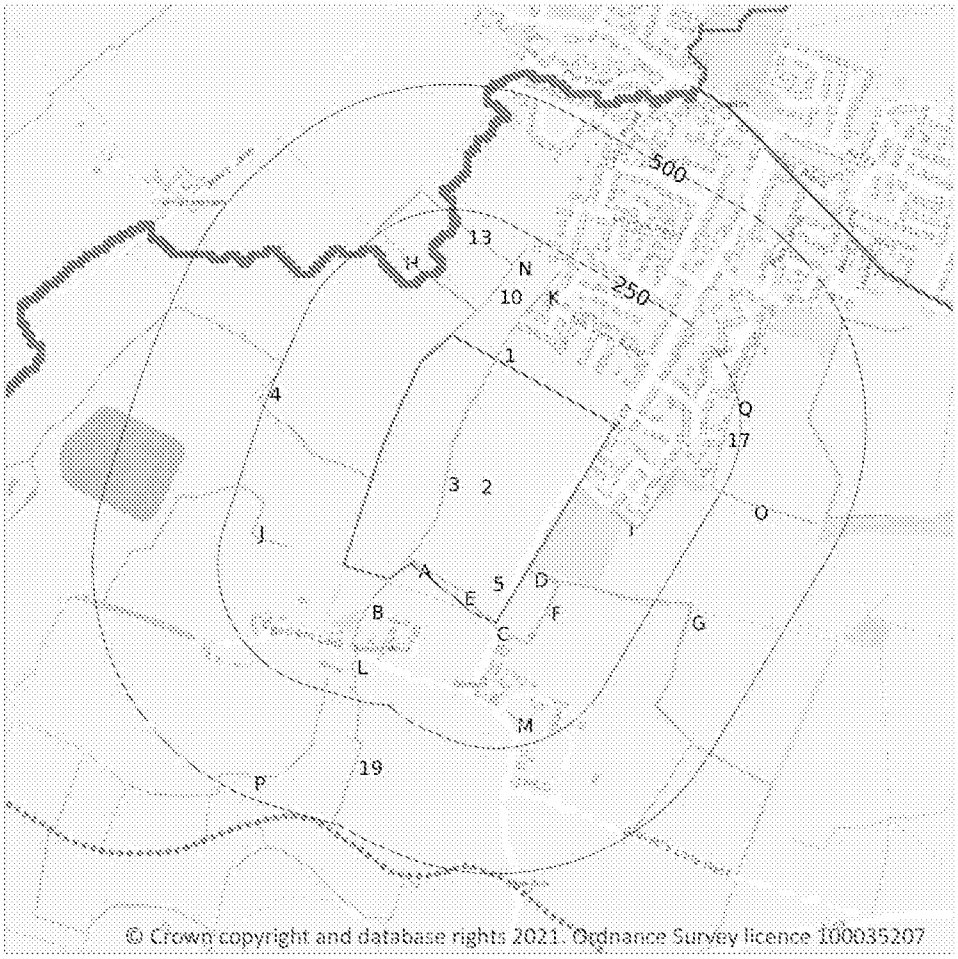
5.10 Source Protection Zones (confined aquifer)

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	35

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 41**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
3	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	18m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	23m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	26m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	65m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

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ID	Location	Type of water feature	Ground level	Permanence	Name
G	65m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
10	67m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	67m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	81m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	110m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	122m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	146m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	146m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	162m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
M	177m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
13	182m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	182m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	184m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

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ID	Location	Type of water feature	Ground level	Permanence	Name
N	201m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
17	214m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	217m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	222m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	226m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
19	227m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	227m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	244m E	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	21

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 41**

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 41**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
5	**On site**	**River WB catchment**	**Ryebank Rife**	**GB107041006620**	**Lower Arun**	**Arun and Western Streams**

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. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 41**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
27	488m S	River	Ryebank Rife	GB107041006620	Moderate	Good	Moderate	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. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

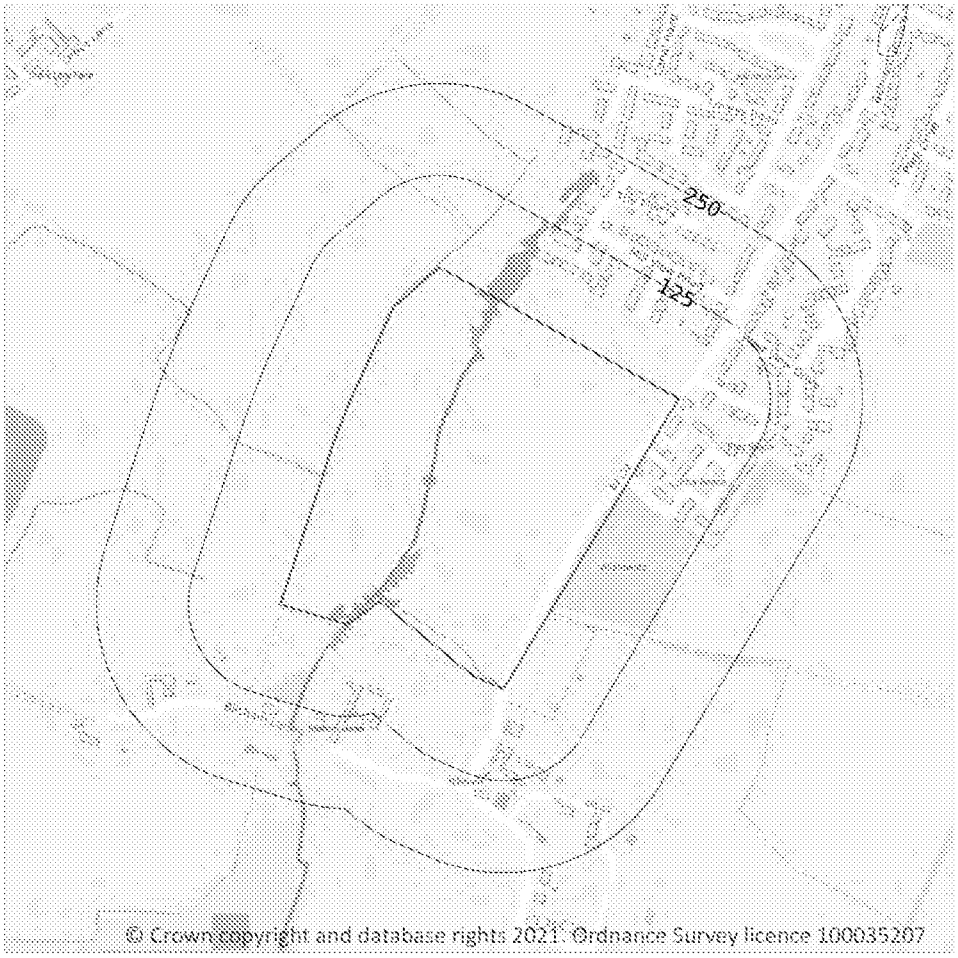
Features are displayed on the Hydrology map on **page 41**

ARUN DISTRICT COUNCIL Y/3/22/OUT

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Littlehampton Anticline West	GB40701G504900	Poor	Good	Poor	2015

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

Environment Agency river and coastal flooding:

- High
- Medium
- Low
- Very Low

- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences

- Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	33

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

Features are displayed on the River and coastal flooding map on **page 47**

Distance	RoFRaS flood risk
On site	**High**
0 - 50m	High

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

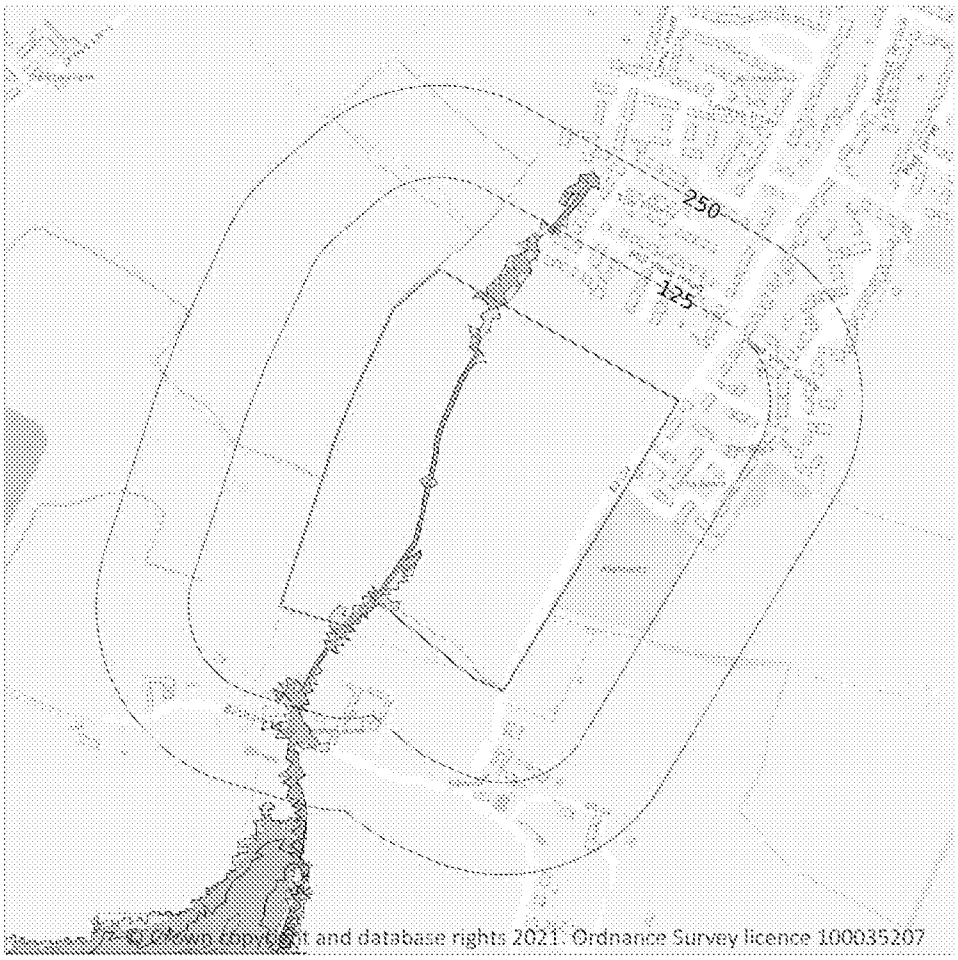
Records within 250m	0

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.

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River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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.

Features are displayed on the River and coastal flooding map on **page 47**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

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

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7.7 Flood Zone 3

Records within 50m	1

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.

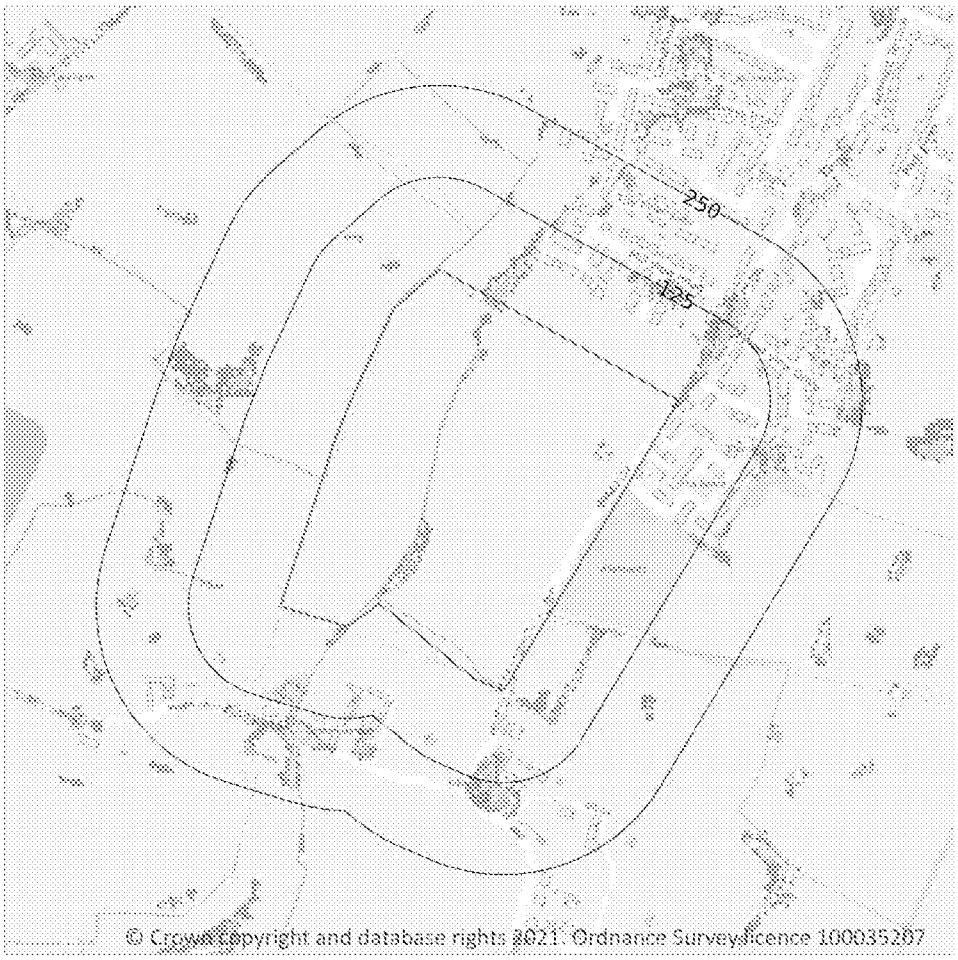
Features are displayed on the River and coastal flooding map on **page 47**

Location	Type
On site	**Zone 3 - (Fluvial Models)**

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

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8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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.

Features are displayed on the Surface water flooding map on **page 51**

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.

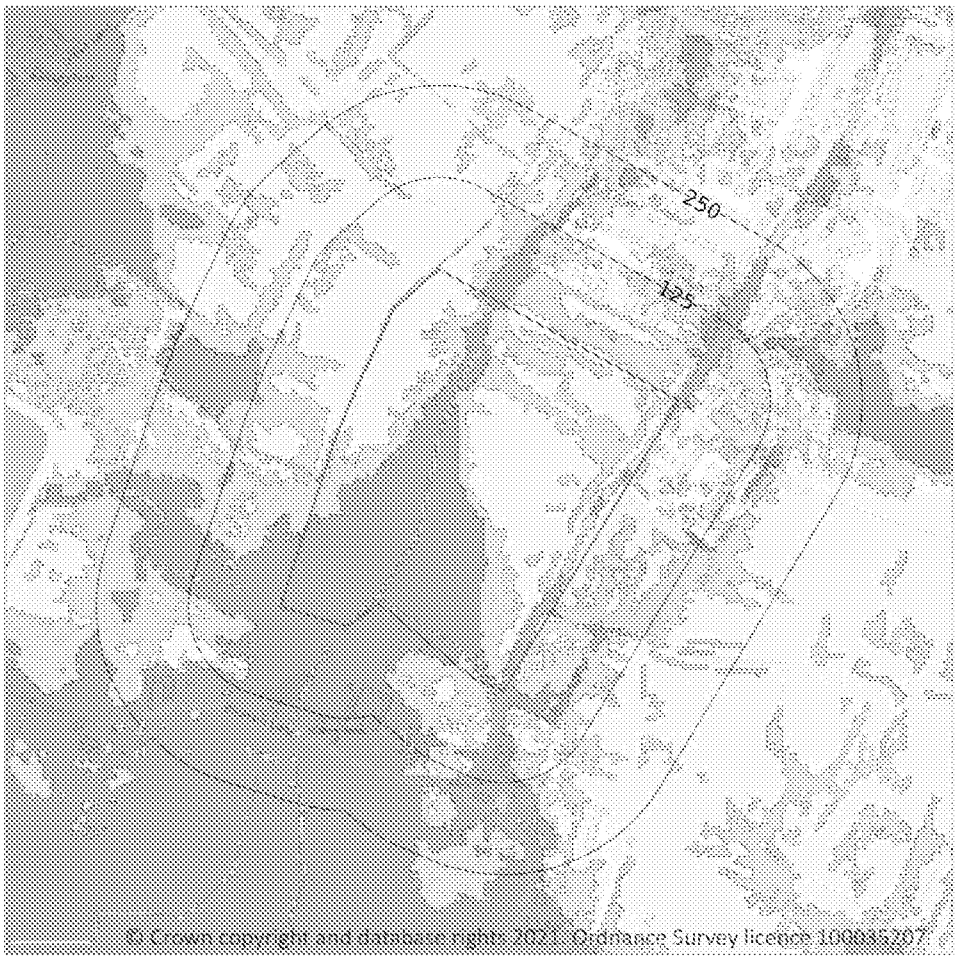
ARUN DISTRICT COUNCIL Y/3/22/OUT

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	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

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

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 53**

This data is sourced from Ambiental Risk Analytics.

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10 Environmental designations

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.

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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	0

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.

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.

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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.

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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

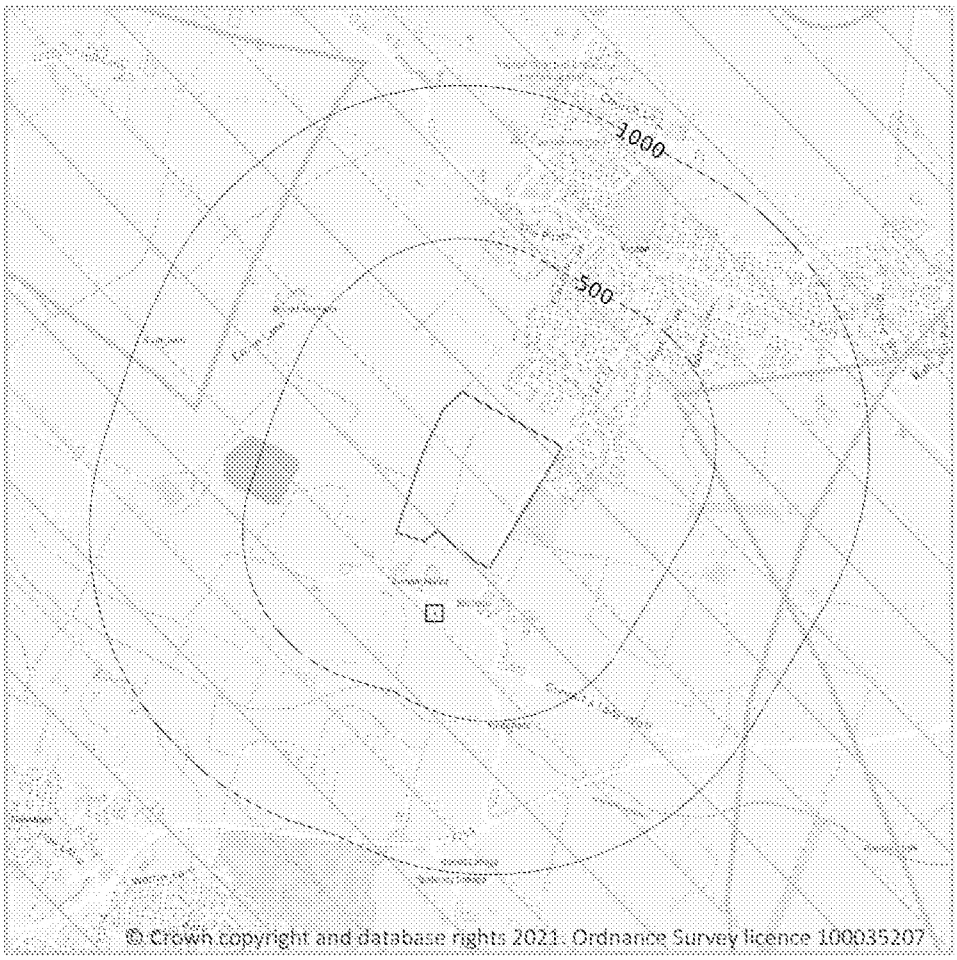
Records within 2000m	1

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.

Location	Name	Type	NVZ ID	Status
On site	**Aldingbourne Rife NVZ**	**Surface Water**	**S517**	**Existing**

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 58**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.** **Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion**

This data is sourced from Natural England.

10.18 SSSI Units

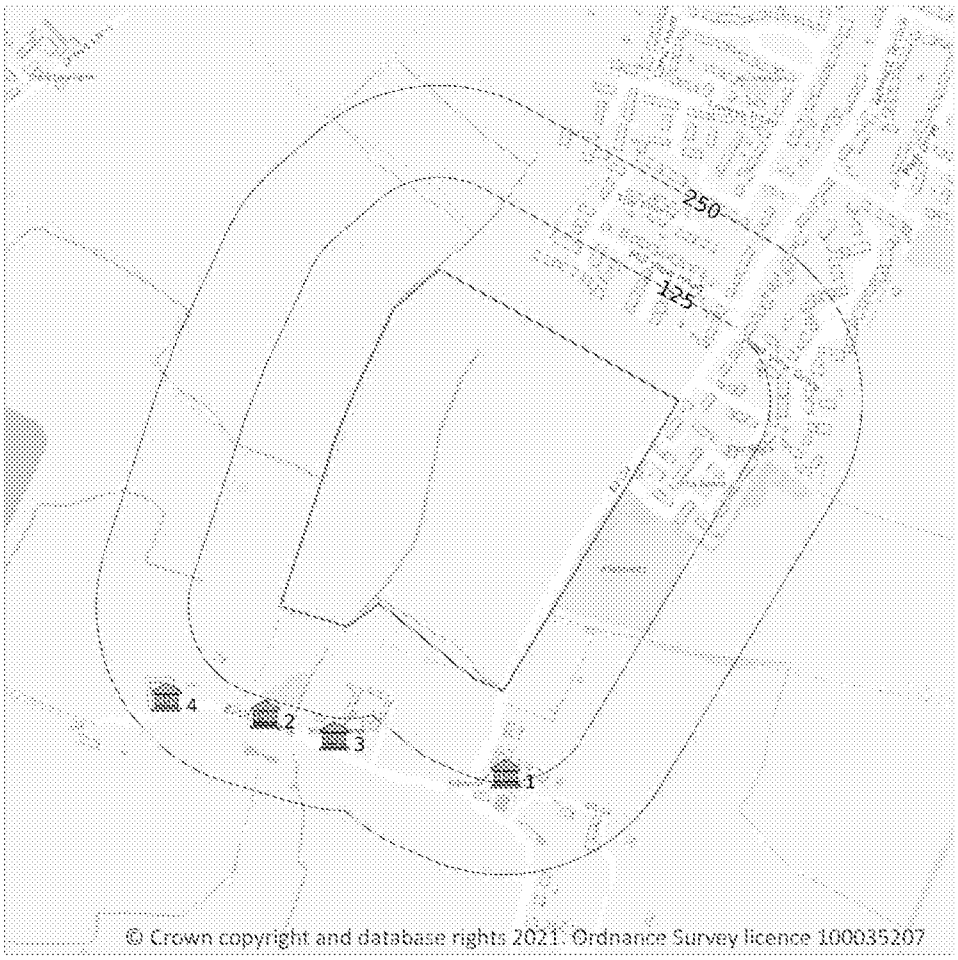
Records within 2000m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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.

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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	4

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 60**

ID	Location	Name	Grade	Reference Number	Listed date
1	113m S	Hobbs Farmhouse, Yapton, Arun, West Sussex, BN18	II	1274594	05/06/1958
2	146m S	The Chapel, Yapton, Arun, West Sussex, BN18	II	1222544	05/06/1958
3	149m S	Bilsham Manor And Manor Cottage, Yapton, Arun, West Sussex, BN18	II	1274593	05/06/1958
4	198m SW	Old Bilsham Farmhouse, Yapton, Arun, West Sussex, BN18	II	1237749	20/09/1984

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

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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



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	9

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 63**

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
2	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
3	On site	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
4	On site	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
5	On site	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
6	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
7	64m NE	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
8	66m NE	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
9	174m W	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

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This data is sourced from Natural England.

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	2

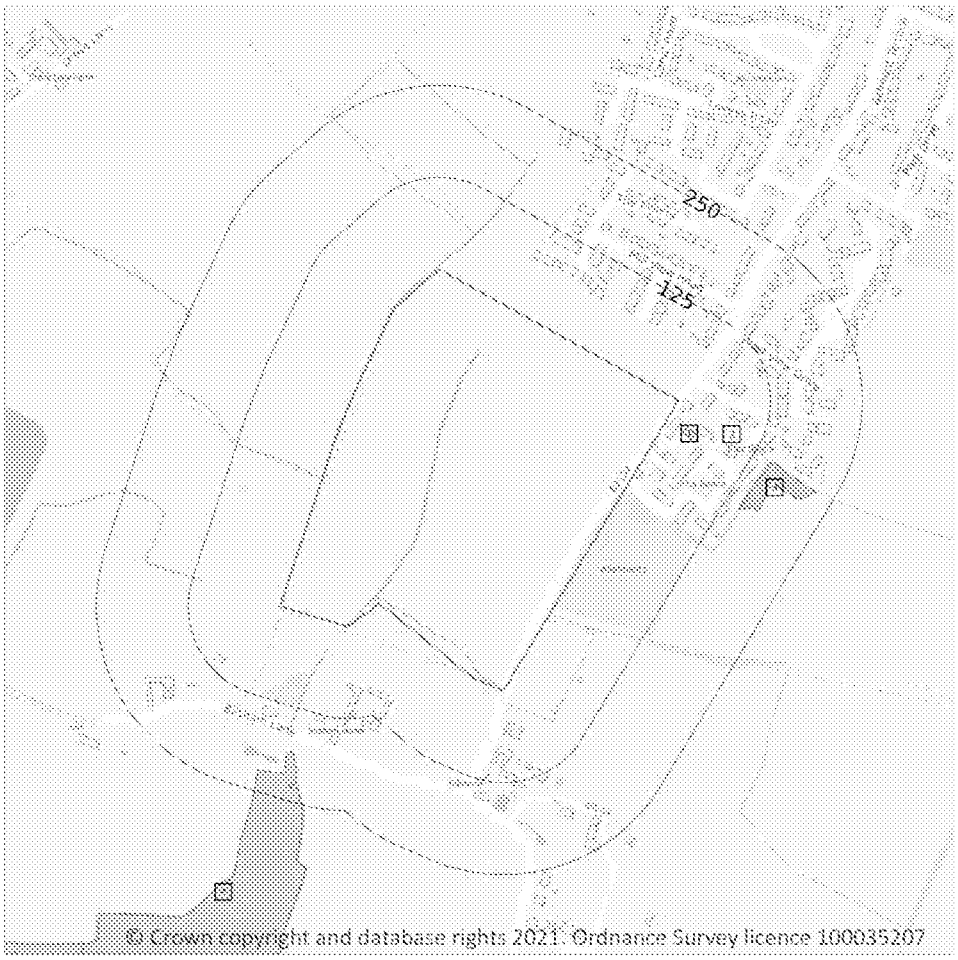
Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

Location	Reference	Scheme	Start Date	End Date
On site	**491291**	**Countryside Stewardship (Middle Tier)**	**01/01/2017**	**31/12/2021**
184m SW	312108	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021

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This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m 4

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

Features are displayed on the Habitat designations map on **page 67**

ID	Location	Main Habitat	Other habitats
1	28m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	86m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	147m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	184m S	Coastal and floodplain grazing marsh	Main habitat: CFPGM (INV > 50%)

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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

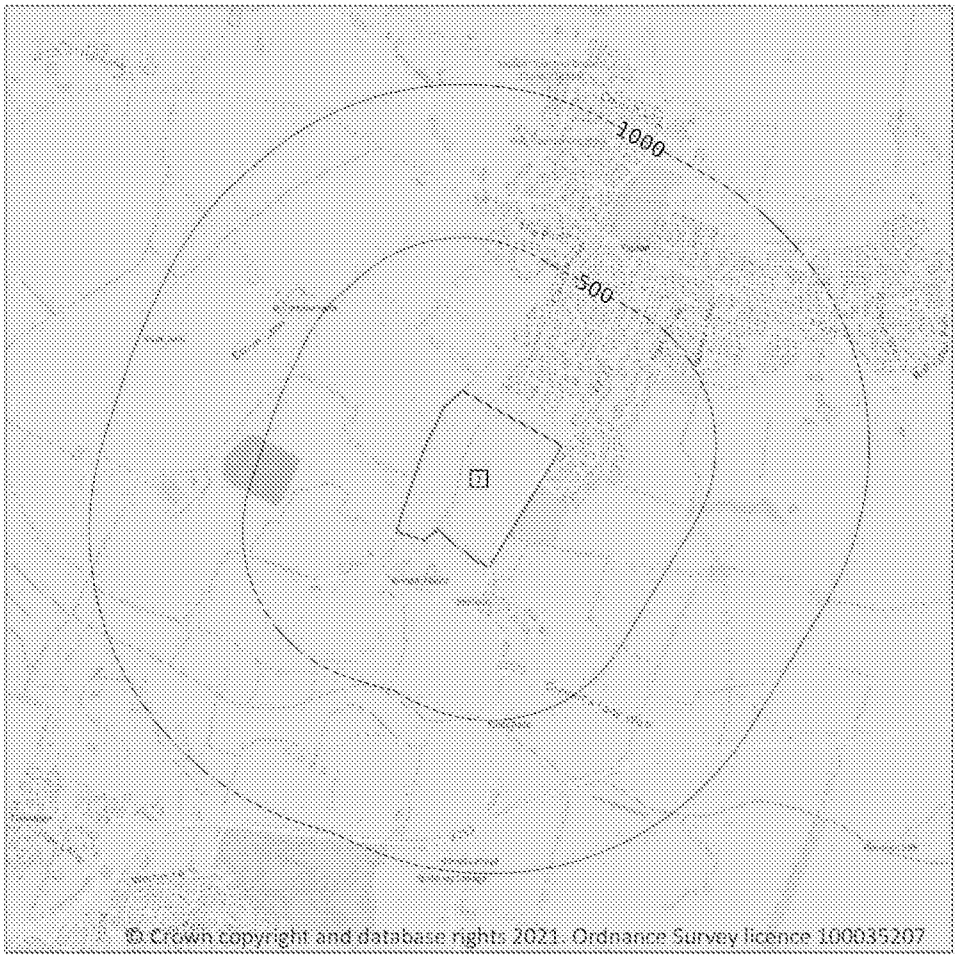
Records within 250m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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 69**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SU90SE

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)

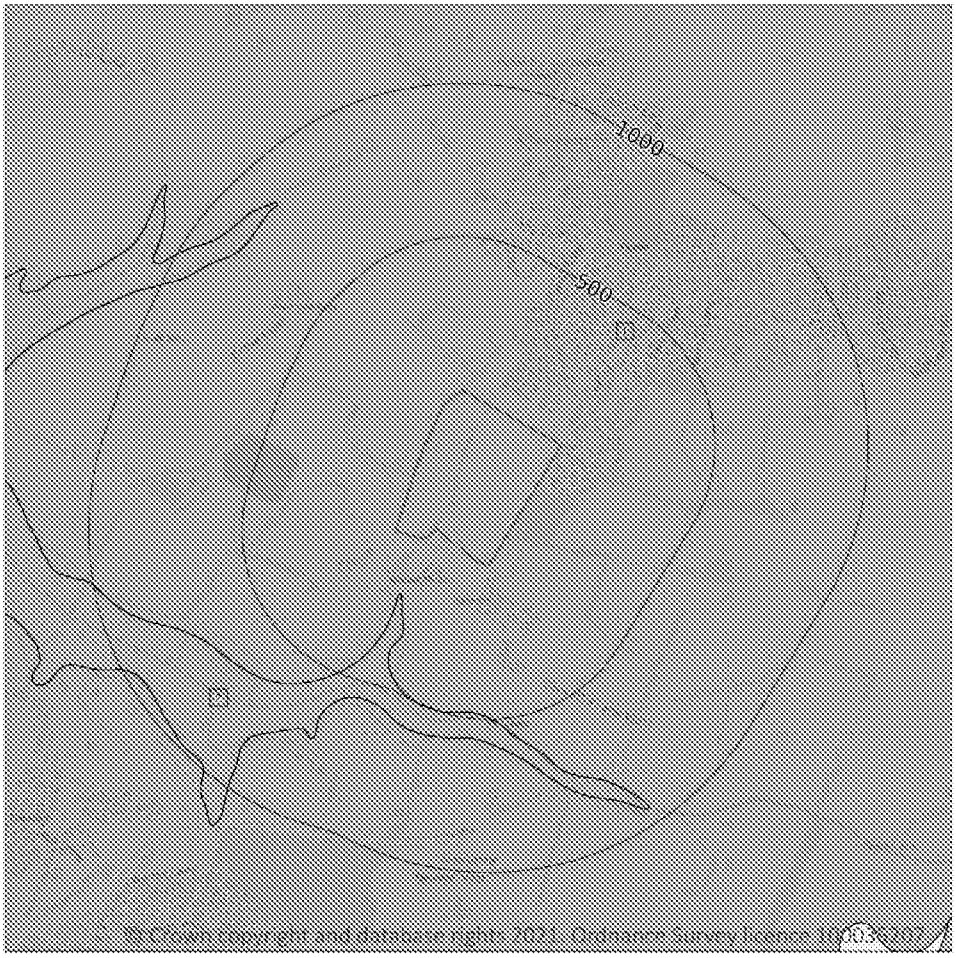
Records within 500m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m **2**

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 71**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**RTDU-Z**	**River Terrace Deposits (undifferentiated) - Silt (unlithified Deposits Coding Scheme)**	**Silt**
2	193m S	RMD-CZ	Raised Marine Deposits - Silty Clay	Clay, Silty

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

14.4 Landslip (10k)

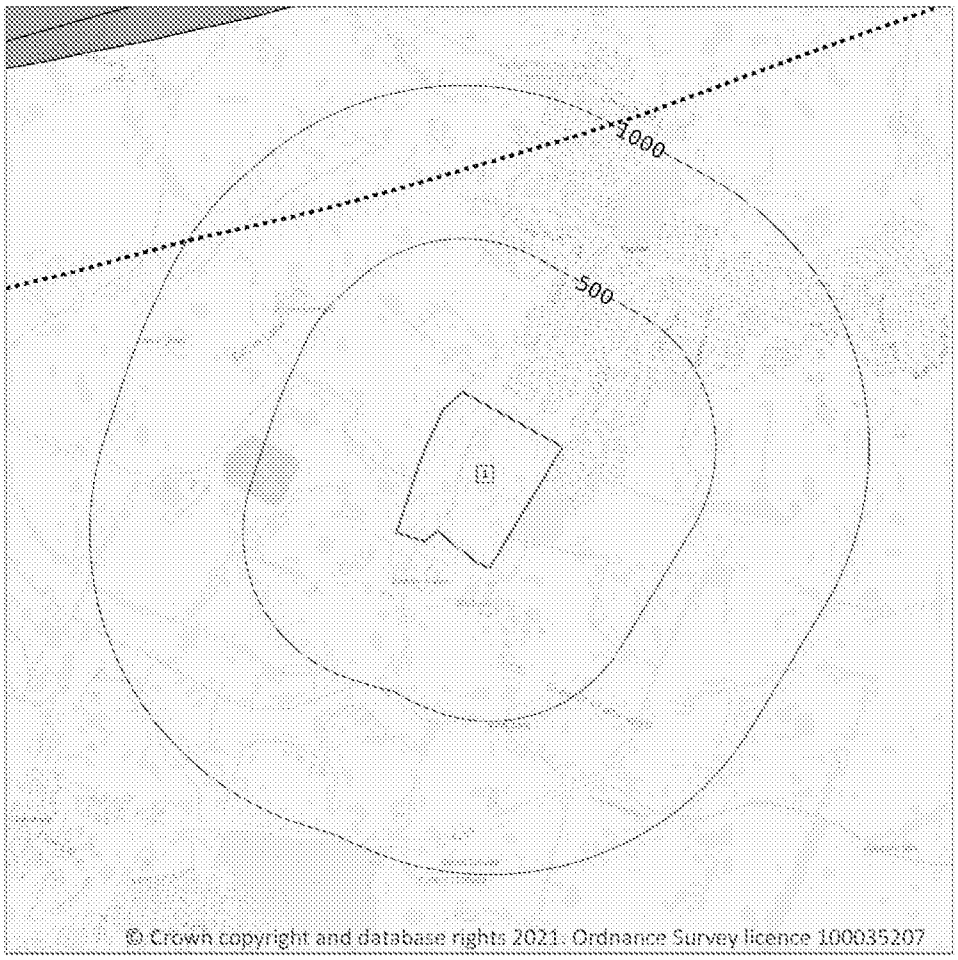
Records within 500m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **1**

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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 73**

ID	Location	LEX Code	Description	Rock age
1	On site	LPCK-CHLK	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation And Portsdown Chalk Formation (undifferentiated) - Chalk	Campanian Age - Turonian Age

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

14.6 Bedrock faults and other linear features (10k)

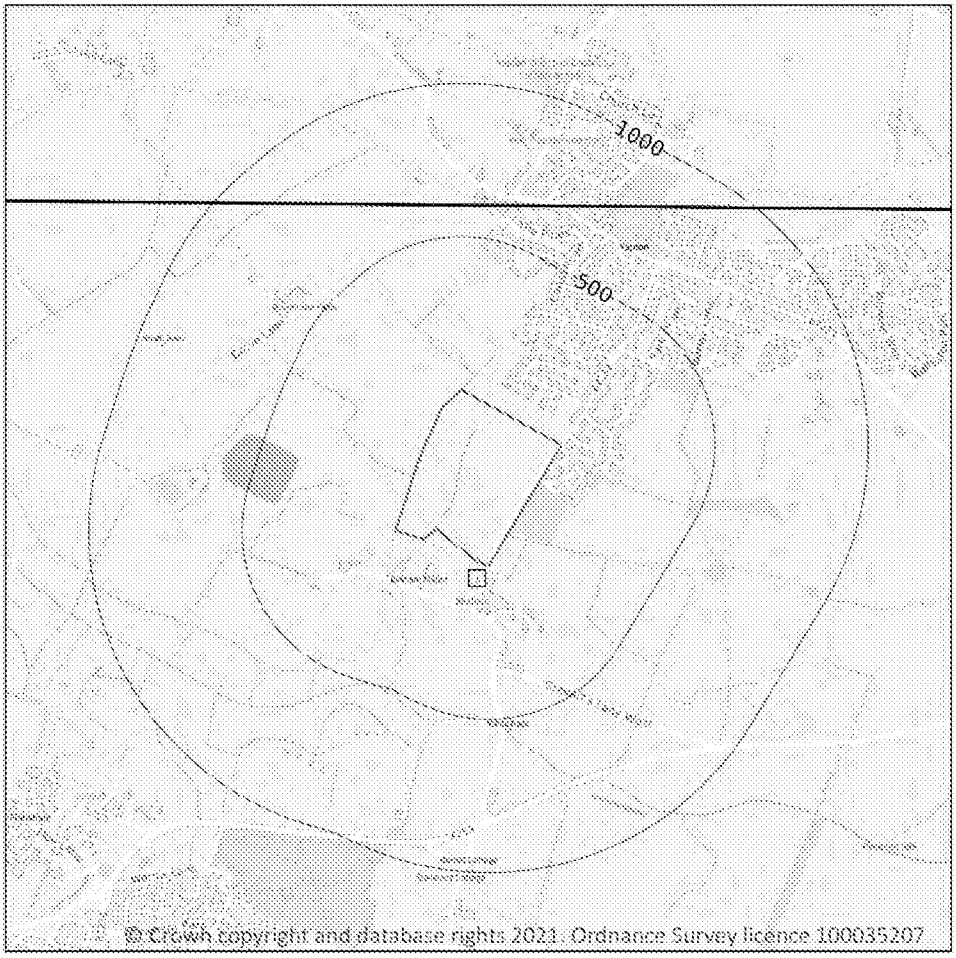
Records within 500m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 75**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW317_332_chichester_and_

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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.

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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	2

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 77**

ID	Location	LEX Code	Description	Rock description
1	On site	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
2	181m S	RMD-XCZSV	RAISED MARINE DEPOSITS	CLAY, SILT, SAND AND GRAVEL

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
On site	Intergranular	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)

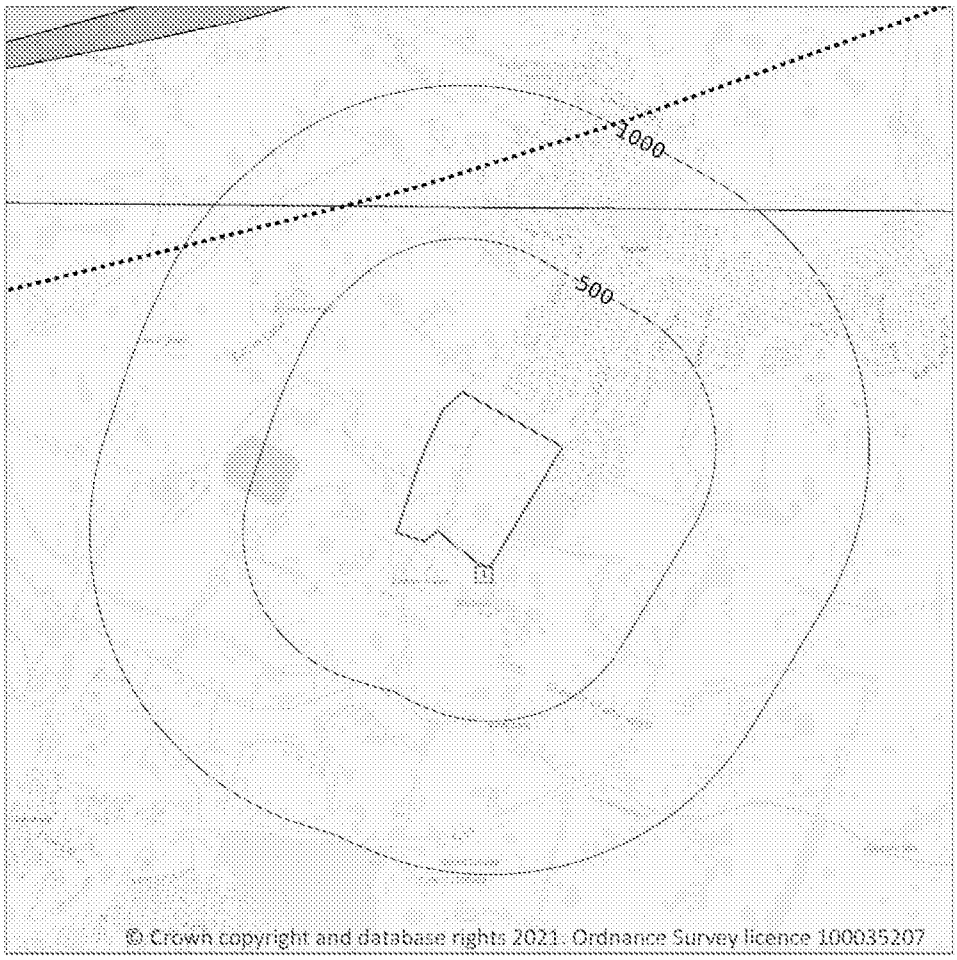
Records within 50m	0

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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 79**

ID	Location	LEX Code	Description	Rock age
1	On site	LPCK-CHLK	LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

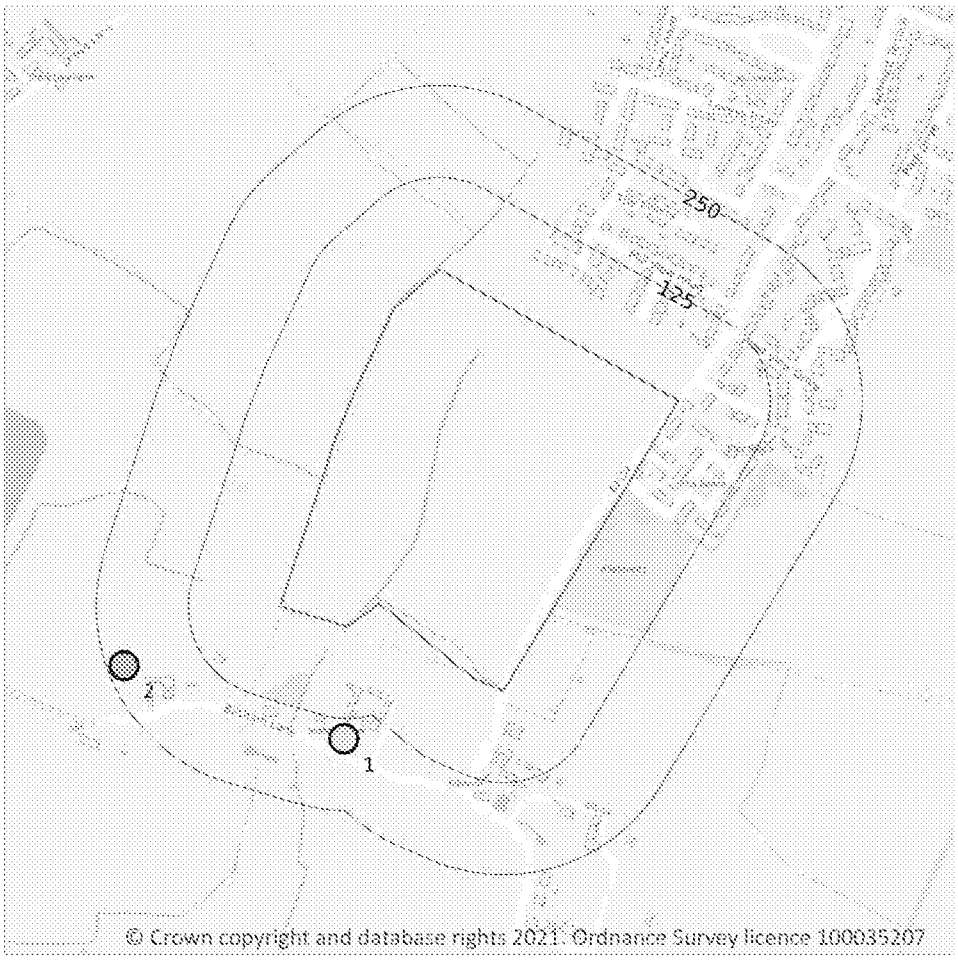
Records within 500m	0

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.

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m **2**

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.

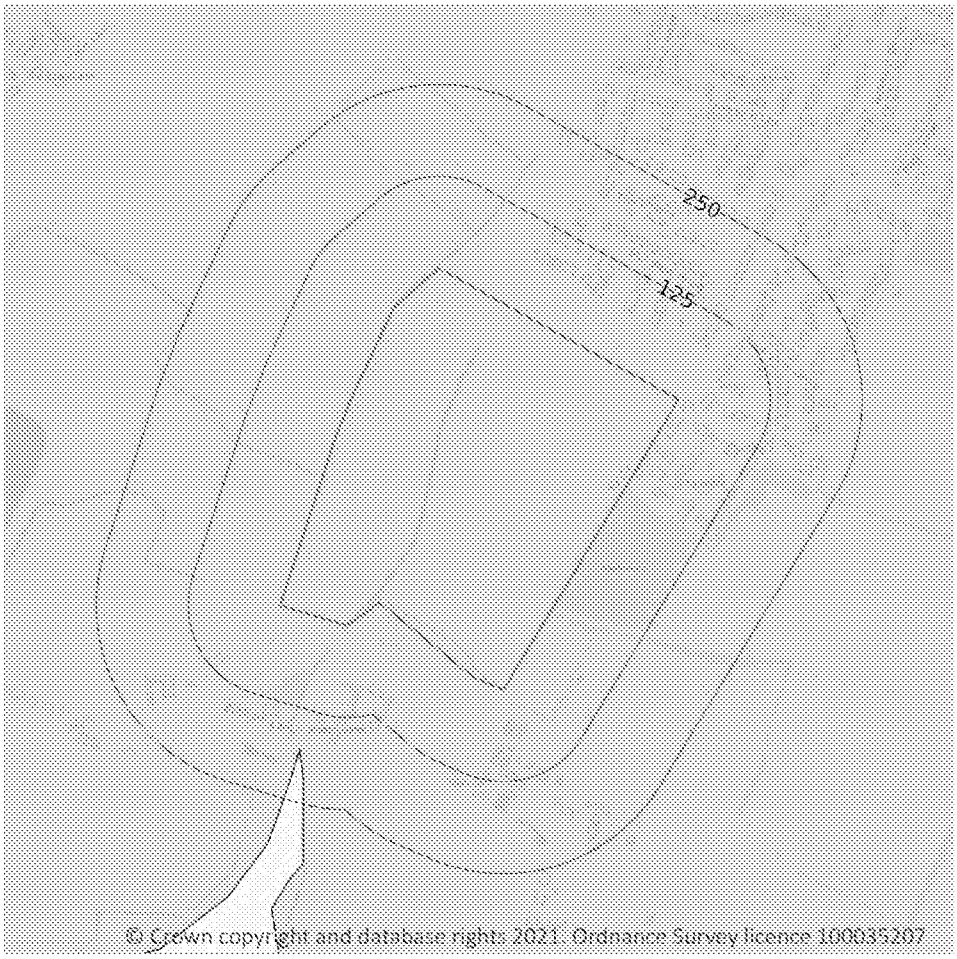
Features are displayed on the Boreholes map on **page 81**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	153m S	497330 102040	BILSHAM HOUSE YAPTON	15.24	N	434426
2	227m W	497030 102140	BILSHAM FARM	5.0	N	434408

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

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).

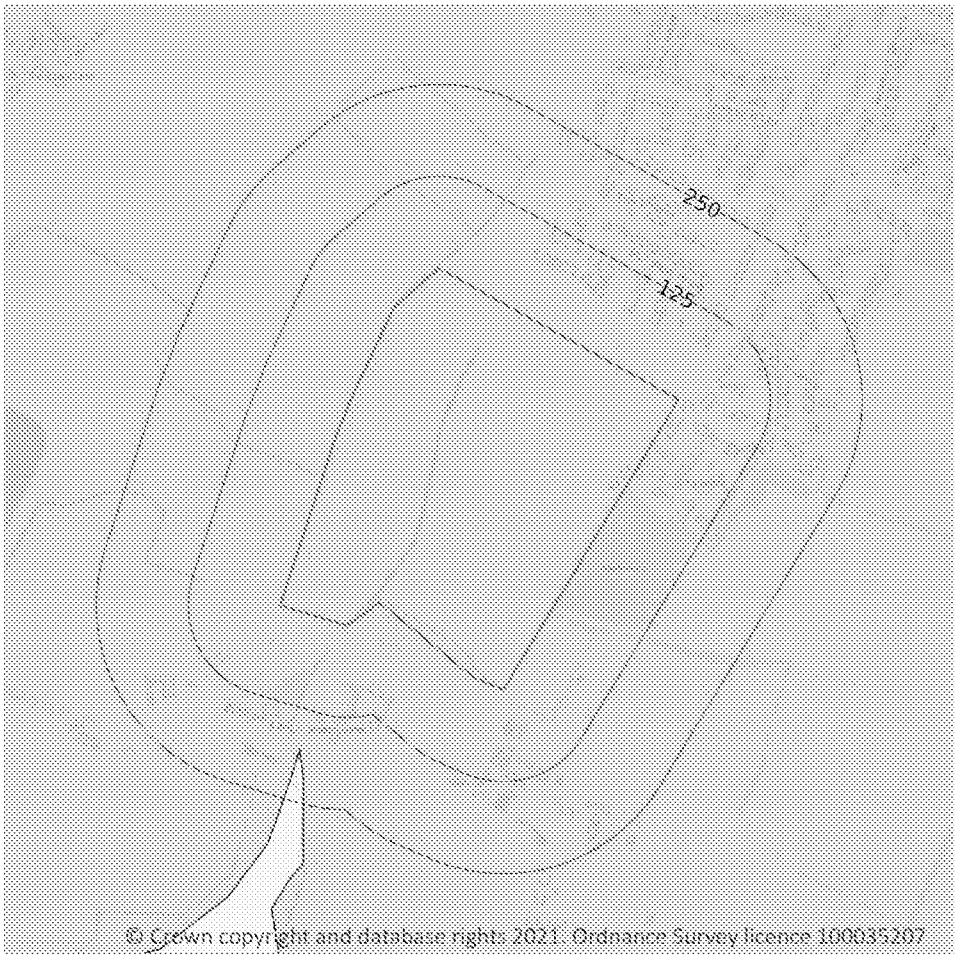
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 82**

Location	Hazard rating	Details
On site	**Low**	**Ground conditions predominantly medium plasticity.**

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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	1

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.

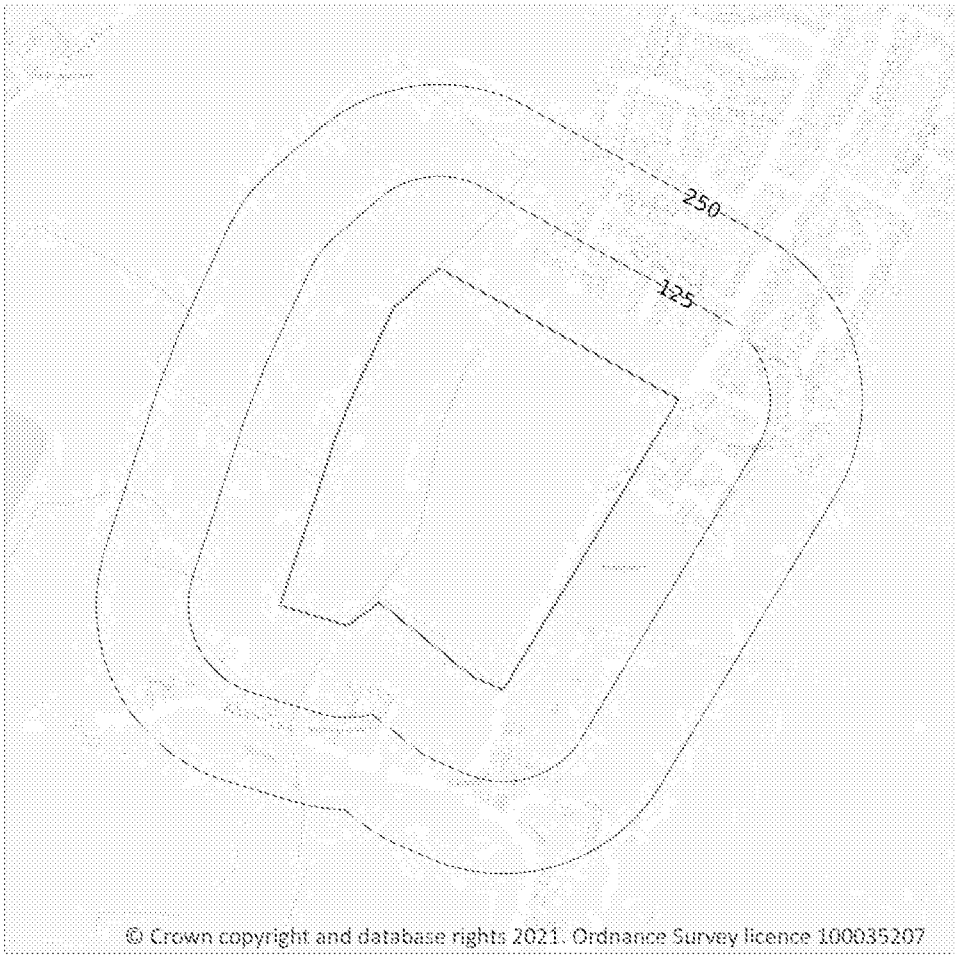
Features are displayed on the Natural ground subsidence - Running sands map on **page 83**

Location	Hazard rating	Details
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Natural ground subsidence - Compressible deposits



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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.

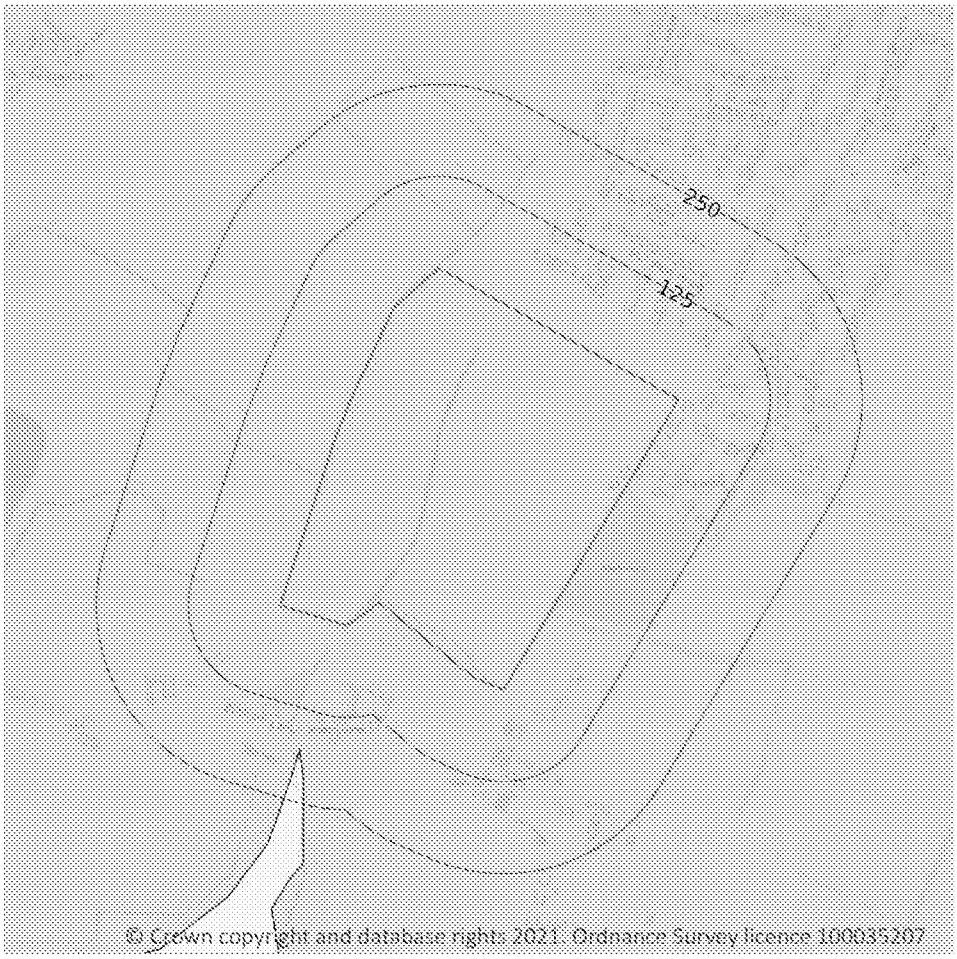
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 84**

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

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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

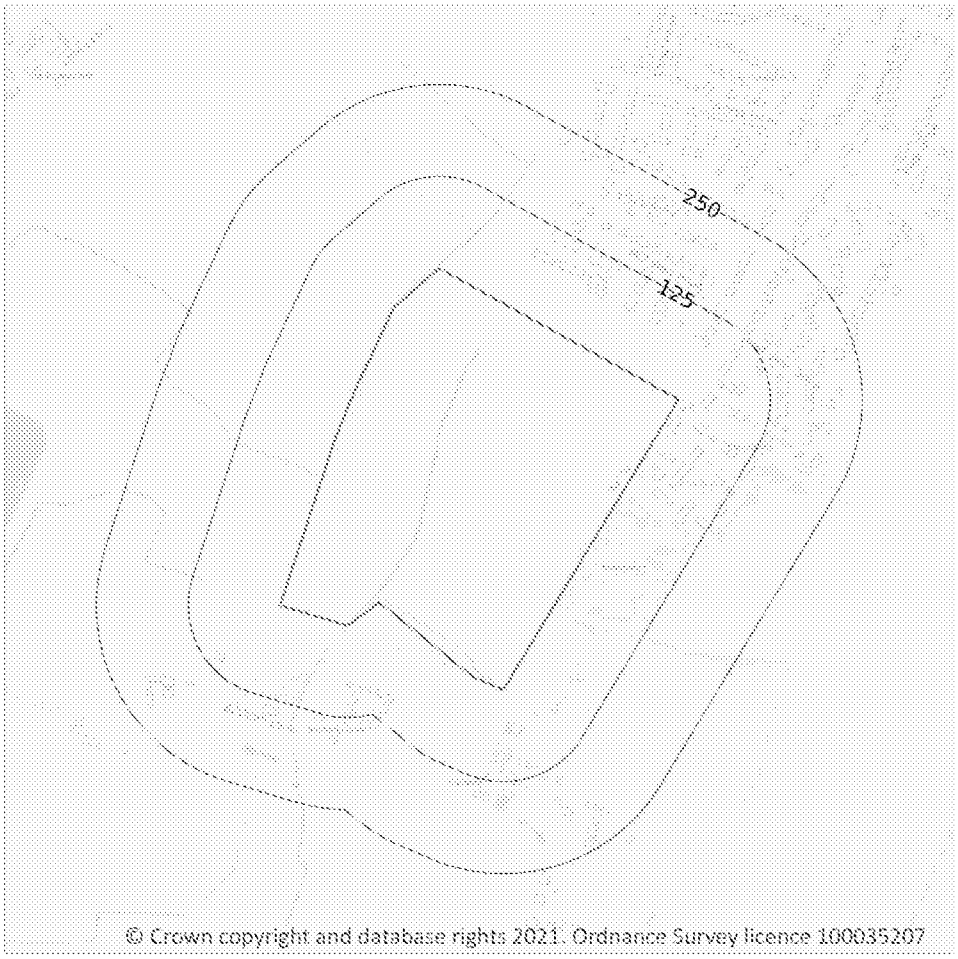
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 85**

Location	Hazard rating	Details
On site	**Low**	**Deposits with potential to collapse when loaded and saturated are possibly present in places.**

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	1

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.

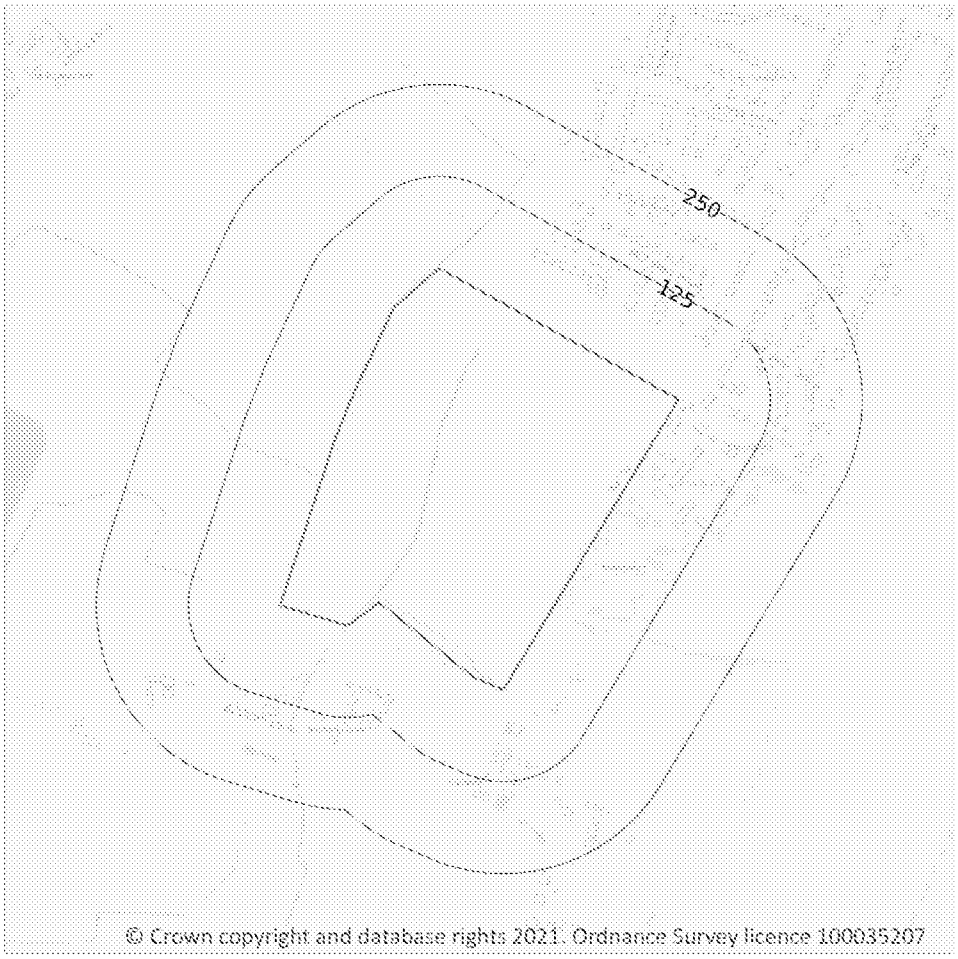
Features are displayed on the Natural ground subsidence - Landslides map on **page 86**

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.**

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Natural ground subsidence - Ground dissolution of soluble rocks



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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

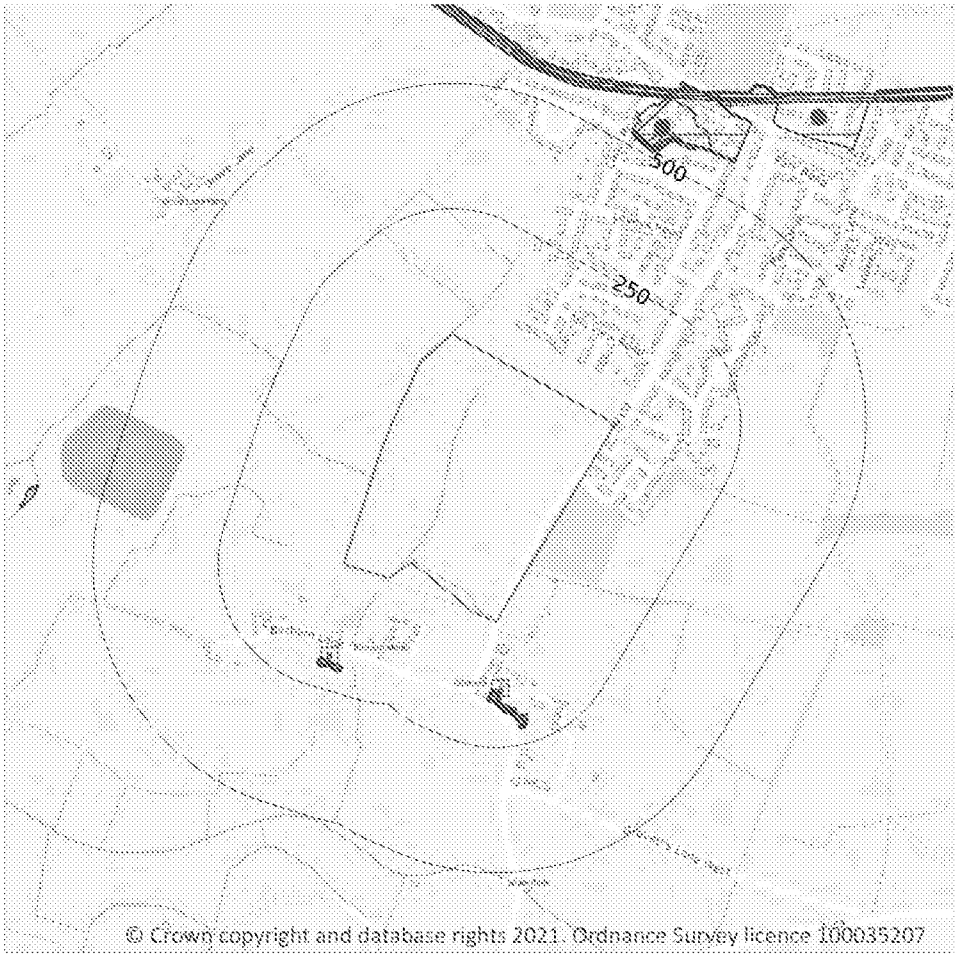
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 87**

Location	Hazard rating	Details
On site	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

18.2 BritPits

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	12

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 89**

ID	Location	Land Use	Year of mapping	Mapping scale
A	135m S	Ponds	1966	1:10560
A	136m S	Ponds	1991	1:10000
A	136m S	Ponds	1978	1:10000
A	138m S	Ponds	1876	1:10560
A	173m S	Pond	1910	1:10560
A	173m S	Pond	1896	1:10560
B	190m S	Pond	1950	1:10560
B	190m S	Pond	1910	1:10560
B	191m S	Pond	1966	1:10560
B	191m S	Pond	1991	1:10000
B	191m S	Pond	1978	1:10000
B	191m S	Ponds	1876	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

ARUN DISTRICT COUNCIL Y/3/22/OUT

18.4 Underground workings

Records within 1000m	0

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

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

18.9 Coal mining

Records on site	0

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

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 Mining Searches UK.

18.13 Clay mining

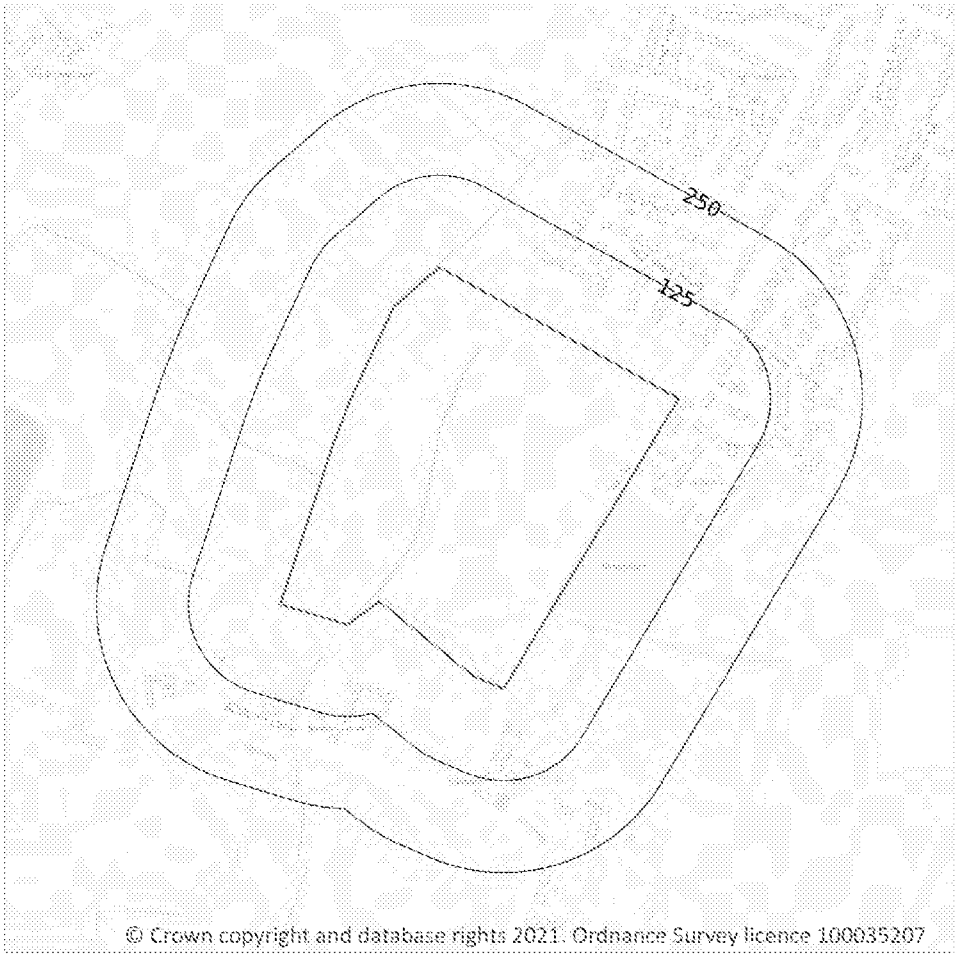
Records on site	0

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

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

ARUN DISTRICT COUNCIL Y/3/22/OUT

19 Radon



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 93**

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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	4

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 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 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.

ARUN DISTRICT COUNCIL Y/3/22/OUT

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.

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21 Railway infrastructure and projects

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	0

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.

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	0

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

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.

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Data providers

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Terms and conditions

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

Appendix C: Site Investigation Information

HARRISON GROUP ENVIRONMENTAL LIMITED

Document: **Ground Investigation Factual Report**

Project: **Lambs Field**

Ref. No.: **GL24212**

Date: **June 2021**

Client: **Landlink Estates Limited**

Prepared For: **Campbell Reith Hill LLP**

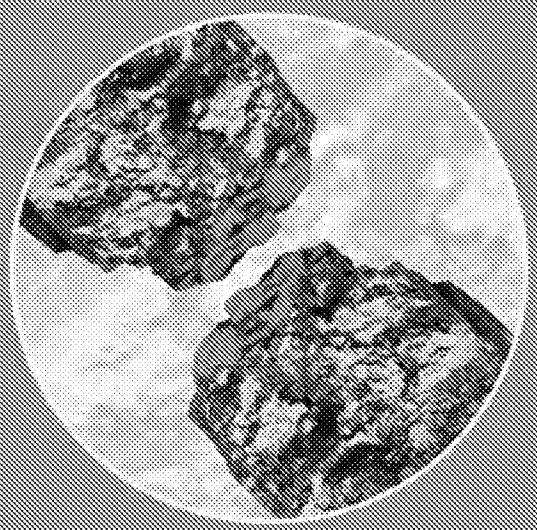
REPORT STATUS:

		INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE
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		INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE
	REV0	INIT JBL SIGN Comments Date 24/06/21	INIT MC SIGN Comments Date 24/06/21	INIT JBL SIGN Comments Date 24/06/21	INIT MC SIGN Comments Date 24/06/21
Revision	**Comments**	**Prepared By**	**Approved By**	**Issued By**	**Audited By**

ARUN DISTRICT COUNCIL Y/3/22/OUT

Document:	**Ground Investigation Factual Report**
Project:	**Lambs Field**
Reference No:	**GL24212**
Date:	**June 2021**
Client:	**Landlink Estates Limited**
Prepared For:	**Campbell Reith Hill LLP**

harrisongeotechnical
ENGINEERING



A division of Harrison Group Environmental Limited

ARUN DISTRICT COUNCIL HYBRID

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FOREWORD

General Conditions Relating to Site Investigation

This investigation has been devised to generally comply with the relevant principles and requirements of BS10175:2001+A2:2017 “Investigation of potentially contaminated sites - Code of practice” and where directed by the principles and application rules of Eurocode 7 (EC7 – Part 1 and Part 2). The recommendations made and opinions expressed in this report are based on the information obtained from the sources described using a methodology intended to provide reasonable consistency and robustness.

The opinions expressed in this report are based on the ground conditions revealed by the site works, together with an assessment of the site and of laboratory test results. Whilst opinions may be expressed relating to sub-soil conditions in parts of the site not investigated, for example between exploratory positions, these are only for guidance and no liability can be accepted for their accuracy.

Boring, sampling and field test procedures are undertaken in accordance with BS5930:2015 "Code of Practice for Site Investigations". Likewise, in-situ and laboratory testing comply with B.S.1377, "Methods of Tests for Soils for Civil Engineering Purposes", unless stated otherwise in the text. The groundwater conditions entered on the boring records are those observed at the time of investigation. The normal rate of boring usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions.

Some items of the investigation have been provided by third parties and whilst Harrison Group have no reason to doubt the accuracy, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report.

This report is produced for the benefit of the client alone. No responsibility can be accepted for any consequences of this information being passed to a third party who may act upon its contents/recommendations.

[redacted]

ARUN DISTRICT COUNCIL 1/3/22/OUT

FACTUAL REPORT

ON A

GROUND INVESTIGATION

AT

LAMBS FIELD

1.0 TERMS OF REFERENCE AND INTRODUCTION

The work covered by this report was undertaken on behalf of Landlink Estates Limited by Harrison Group Environmental Ltd (HGE). The work was undertaken in accordance with the relevant specification Ref. SO793688-CRH-XX-XX-FG-G-7007_P2_PropGI-Constraints issued by Campbell Reith Hill LLP (CampbellReith) who acted as the engineer.

The purpose of the investigation was to provide factual geotechnical and geo-environmental data from a site walkover, fieldwork and subsequent laboratory testing, which will be used to assist with the design of the new site development.

This report presents the results of the fieldwork together with the associated geotechnical and geo-environmental laboratory testing.

2.0 LOCATION AND DESCRIPTION OF SITE

The site is located at Lambs Field, Bilsham Road, Yapton BN18 0FN. The site is situated to the west of Bilsham Road, located between the southern outskirts of the village of Yapton and the hamlet of Bilsham, roughly centred at National Grid Reference (NGR) SU 97542 02435.

The site was roughly rectangular in shape, encompassing an area of approximately 16ha. The site was bound to the east by Bilsham Road, opposite a residential estate accessed via Taylors Close and an allotment located to the south of Taylors Close. Open fields border the site to the north, west and south. A reservoir was located approximately 400m to the west of the site. The surrounding area comprised primarily of agricultural and residential land use. The site consisted of an active arable agricultural field, notably divided by a drainage feature running from the north east to the south west of the site. The topography of the site gently sloped towards the central drainage feature.

A site location plan, Drawing No. GL24212-DR001 is presented in Appendix A.

3.0 EXPECTED GEOLOGY

The expected geology has been obtained from the specification provided by CampbellReith, outlined below in Table 3.0.

Stratum	Description and Thickness
Superficial Deposits	Raised Marine Deposits – comprising gravel, sand, silt, and clay.
Superficial Deposits	River Terrace Deposits (undifferentiated) – comprising sand, silt, and clay.

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Stratum	Description and Thickness
Bedrock	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) - comprising chalk with flints, with discrete marl seams, nodular chalk, sponge-rich and flint seams throughout.
Groundwater	Historical borehole records near to the site do not indicate the expected groundwater level.

Table 3:0: Summary of Geology.

4.0 FIELDWORK

Details of the ground investigation methods employed have been presented on the appended data sheet and a summary of the fieldwork has been presented below.

The intrusive investigation was designed to provide good coverage of the ground conditions across the site. The scope of the site works was generally in accordance with that proposed by CampbellReith and included the following:

- Service clearing and setting out of the exploratory locations (carried out by Midland Survey Ltd)
- Dynamic Continuous Window Sampling (5 No. to a maximum depth of 5.45mbgl)

The main element of the intrusive fieldwork was carried out by HGE between 18th and 19th May 2021. All exploratory locations are detailed on the appended drawing GL24212-DR002 presented in Appendix A.

In addition to consulting all available service plans and lifting all available covers prior to intrusive activities taking place, service clearance was carried out using Ground Penetrating Radar (GPR). Service inspection pits were also hand dug at borehole locations to clear near surface utilities.

The sampling strategy and locations were designed and provided by CampbellReith, taking into account local site constraints including reference to topography of the site, the geology encountered and the development proposals.

During and immediately following completion of the fieldwork, geotechnical samples were transported to Harrison Group's Laboratory in Norwich via in house transportation where, upon arrival, they were logged into our sample management system. Following receipt of the geotechnical schedules, certain geotechnical samples were subsequently dispatched to laboratory subcontractors via courier.

Environmental samples were dispatched to the nominated chemical testing laboratory using cool boxes and refrigerant blocks. Chain of Custody (CoC) Sheets were prepared, copies of which accompanied the samples.

4.1 Surveying

Exploratory locations were surveyed whilst undertaking a utility clearance survey on 18th May 2021 to establish co-ordinates and levels. Any changes to proposed exploratory positions were discussed and confirmed with CampbellReith via email and telephone.

The locations are presented on the exploratory location plan GL24212-DR002 presented in Appendix A. Co-ordinates and levels are detailed, both below, and on the relevant logs presented in Appendix B.

4.2 Dynamic Continuous Sampling Boreholes

5 No. dynamic continuous sampling boreholes, WS01 to WS04 & WS02A, were drilled to a maximum depth of 5.45mbgl, using a dual-purpose tracked rig, in order to identify, sample and test the underlying sub-soils and is summarised in Table 4.2.

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WS02 was terminated at 1.70mbgl after refusal and recovery of suspected pea shingle, and was was moved to WS02A location.

Borehole No.	Easting	Northing	Surface Level (mAOD)	Depth (m)	Detail
WS01	497402.57	102261.89	1.87	5.00	General site coverage, sampling, logging and the installation of gas and ground water installation.
WS02	497546.88	102624.36	4.94	1.70	General site coverage, sampling, logging. Terminated at 1.70m. Moved to WS02A.
WS02A	497552.89	102618.35	4.94	5.45	General site coverage, sampling, logging and the installation of gas and ground water installation.
WS03	497769.75	102500.93	6.08	5.45	General site coverage, sampling, logging and the installation of gas and ground water installation.
WS04	497301.52	102385.64	4.29	5.15	General site coverage, sampling, logging and the installation of gas and ground water installation.

Table 4.2: Summary of Dynamic Continuous Sampling Boreholes.

A detailed description of all the strata encountered, in-situ testing undertaken, position and types of samples taken along, with any groundwater observations made at the time of drilling are included on the dynamic continuous sampling borehole records presented in Appendix B. Rig certificates are presented in Appendix F.

4.3 Installations

WS01, WS02A, WS03 and WS04 were installed with standpipes for monitoring the ground gas and groundwater within the soils encountered. Table 4.3 summarises the details of these installations.

Monitoring Point I.D.	Diameter of Installation (mm)	Response Zone (mbgl)		Response Zone (mAOD)		Target Strata
		Top	Base	Top	Base	
WS01	50	1.00	3.00	0.87	-1.13	Superficial Deposits and Chalk
WS02A	50	1.00	4.20	3.94	0.74	Superficial Deposits
WS03	50	1.00	5.00	5.08	1.08	Superficial Deposits and Chalk
WS04	50	1.00	4.00	3.29	0.29	Superficial Deposits

Table 4.3: Summary of Cable Percussive Borehole Groundwater Installations.

Detailed descriptions of the installations and their corresponding backfill materials are included on the relevant exploratory hole logs presented in Appendix B.

4.4 Gas and Groundwater Monitoring

Three rounds of monitoring were undertaken in borehole installations on the following dates:

- Round 1 – 25th May 2021
- Round 2 – 8th June 2021
- Round 3 – 15th June 2021

The gas monitoring utilised a GA5000 infrared gas analyser to record concentrations of gases including methane, carbon dioxide, oxygen and the related pressure and flow. Volatile Organic Compounds (VOCs) were monitored utilising a PID meter. The results are presented on the Gas Monitoring Result sheets contained in Appendix C.

Groundwater levels and any free phase NPAL (DNAPL and LNAPL) were also monitored on the above dates utilising a dual phase interface meter. The groundwater monitoring results are presented in Appendix C.

Groundwater samples from the installations were collected as part of the monitoring round on 15th June 2021. The groundwater analysis results are presented in Appendix E.

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5.0 GEOTECHNICAL TESTING

Use of the laboratory and field tests presented below to establish geotechnical parameters should be carried out in accordance with BS EN 1997-2 Eurocode Part 2.

5.1 In-Situ Testing

In-situ testing was undertaken for geotechnical purposes and samples were obtained for appropriate laboratory analysis. Site based geotechnical testing is presented in the Appendix B and summarised below (Table 5.1).

Test Type and Reference	No.	Test Depth Range (mbgl)	Results Range	Comments / Limitations
Standard Penetration Test (BS EN ISO 22476-3:2005)	20	1.20 - 5.00	6 - 43	Standard Penetration Tests (SPTs) display a degree of scatter, with some elevated values likely to be due to encountering bricks, gravels and cobbles within the made ground or encountering a water strike. Non calibrated SPT hammers can result in a wide variance between reported results. It should be noted we report raw SPT N values rather than corrected $N_{(60)}$ values. However, calibration certificates are provided in Appendix F so as to enable $N_{(60)}$ values to be calculated if required.

Table 5.1: Summary of In-Situ Geotechnical Testing

The dynamic continuous sampler SPT Hammer Test Report (SPT Hammer Ref: DART312 ER: 64%) is presented in Appendix F.

5.2 Geotechnical Laboratory Testing

Geotechnical laboratory testing scheduled by CampbellReith on selected soil samples recovered from the exploratory holes, was carried out to identify the physical characteristics of the soils encountered. The results of this work are presented in Appendix D and are summarised below (Table 5.2). Any restrictions in the testing schedule were notified by the laboratory, details of which are provided in the appended records.

Test Type and Reference (BS 1377: 1990 unless stated)	No. of tests	Results (Range)	Comments / Limitations
Water content (BS EN ISO 17892-1: 2014)	12	13 - 24%	Determinations on disturbed samples, including those obtained from dynamic continuous sampler boreholes may not be wholly representative due to disturbance arising from the sampling process.
Liquid Limit (Part 2: Clause 5)	10	19 - 31%	Only material passing a 425micron sieve is utilised. Therefore, the results may not be wholly representative of in-situ material.
Plastic Limit (Part 2: Clause 5)	10	14 - 23%	
Particle size distribution - wet sieving (Part 2: Clause 9.2)	4	Cobbles 0.0% Gravel 1.0 - 28.0%	The recovery of an adequate mass of coarse-grained soils for particle distribution analysis can be difficult in boreholes. In obtaining such samples from cable tool boreholes it should also

Test Type and Reference (BS 1377: 1990 unless stated)	No. of tests	Results (Range)	Comments / Limitations
Particle size distribution – Pipette Sedimentation (Part 2:9)	4	Sand 8.0 - 33.0% Silt 42.0 – 71.0% Clay 10.0 - 16.0%	be noted that some loss of fine material generally occurs due to the nature of the sampling process. For health and safety precautions, the laboratory may be unable to undertake the test if suspected asbestos or gross contamination is identified on sample preparation.
Saturated Moisture Content & Intact Dry Density	2	N/A	No suitable sized intact chalk lumps present in the samples, the analysis was changed to Atterberg Limits.
Soil pH (L099-PL - I2 in house)	2	8.3 – 8.6	Please refer to the analysis in Appendix D.
Water Soluble Sulphate Content 2:1 Aqueous Extract (L038-PL - I2 in house)	2	0.0055 – 0.0060g/l	

Table 5.2: Summary of Geotechnical Laboratory Testing.

6.0 CHEMICAL LABORATORY TESTING

6.1 Environmental Laboratory Testing

Environmental laboratory testing was scheduled by CampbellReith on selected soil, and groundwater samples recovered from the exploratory holes and monitoring wells.

The type and quantity of environmental laboratory testing undertaken is summarised below (Table 6.1). The results are presented in Appendix E.

Test Type	No. Of Tests
Soil	
s1.3 - Asbestos in Soil using stereo microscopy	4
s1.4 - Total Organic Carbon	2
s1.6 - (As, Be, B, Cd, Cr, Ni, Pb, Hg, Se, Cu, V, Zn, Moisture Content, PAHs USEPA 16, EPH Banded (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, >C21), Sulphate, (total), Sulphide, Phenols Monohydric (Total of Phenol+Cresol+Xylenol), Cyanide (total), pH)	4
Water	
w1.1 - As, Cd, Cr, Cu, Ni, Zn, Pb, Hg, B, Se, Hex Chromium, Total Cyanide, Free Cyanide, Soluble Sulphate, Sulphide, Total Sulphur, Speciated (16) PAHs, Phenols, Thiocyanate, Total TPH, pH.	2
pH	2
Soluble Sulphate	2
Sulphide	2
Total Sulphur	2

Table 6.1: Summary of Environmental Testing

ARUN DISTRICT COUN

Report Compiled by:

Report Checked by:

[redacted]

James Blyth BSc (Hons) FGS
Geoenvironmental Engineer

Martin Cooper BEng (Hons) FGS
Principal Engineer

REFERENCES

British Geological Survey Onshore GeoIndex 2020.

BSI British Standard, BS5930:2015 "Code of Practice for Ground Investigations".

BSI British Standard, BS1377:1990 "Methods of Test for Soils for Civil Engineering Purposes".

BS EN ISO 17892-1: 2014 "Geotechnical investigation and testing. Laboratory testing of soil. Determination of water content".

BS EN 1997-1 Eurocode 7 Part 1 "General Rules"

BS EN 1997-2 Eurocode 7 Part 2 "Ground Investigation and Testing"

BS EN ISO 22475-1:2006 & 22475-2/3:2011 "Geotechnical investigation and testing. Sampling methods and groundwater measurements".

BS EN ISO 22476:2005+A1:2011 "Geotechnical investigation and testing". Various.

BS EN ISO 14688-2:2004 "Geotechnical investigation and testing. Identification and classification of soil. Principles for a classification".

BS ISO 14686: 2003,"Hydrometric determinations. Pumping tests for water wells. Considerations and guidelines for design, performance and use".

BRE Special Digest 1:2005 "Concrete in Aggressive Ground".

BRE Digest DG365; 2016 "Soakaway design".

LIST OF APPENDICES

APPENDIX A: DRAWINGS

Site Location Plan – (GL24212 – DR001)

Exploratory Location Plan Overview – (GL24212 – DR002)

APPENDIX B: EXPLORATORY HOLE RECORDS

Data Sheet: Site Investigation Methods

Key to Site Investigation Records

Window Sampler Records

APPENDIX C: GAS AND GROUNDWATER MONITORING

- Round 1 – 25th May 2021
- Round 2 – 8th June 2021
- Round 3 – 15th June 2021

APPENDIX D: GEOTECHNICAL LABORATORY TESTING

GL24212-01 Test Report Transmittal

GL24212-01 Summary of Restricted Test

21-78136-1

APPENDIX E: ENVIROMENTAL LABORATORY TESTING

21-76143-1 (Soil)

21-81693-1 (Water)

APPENDIX F: RIG CERTIFICATIONS

SPT Hammer Certificates

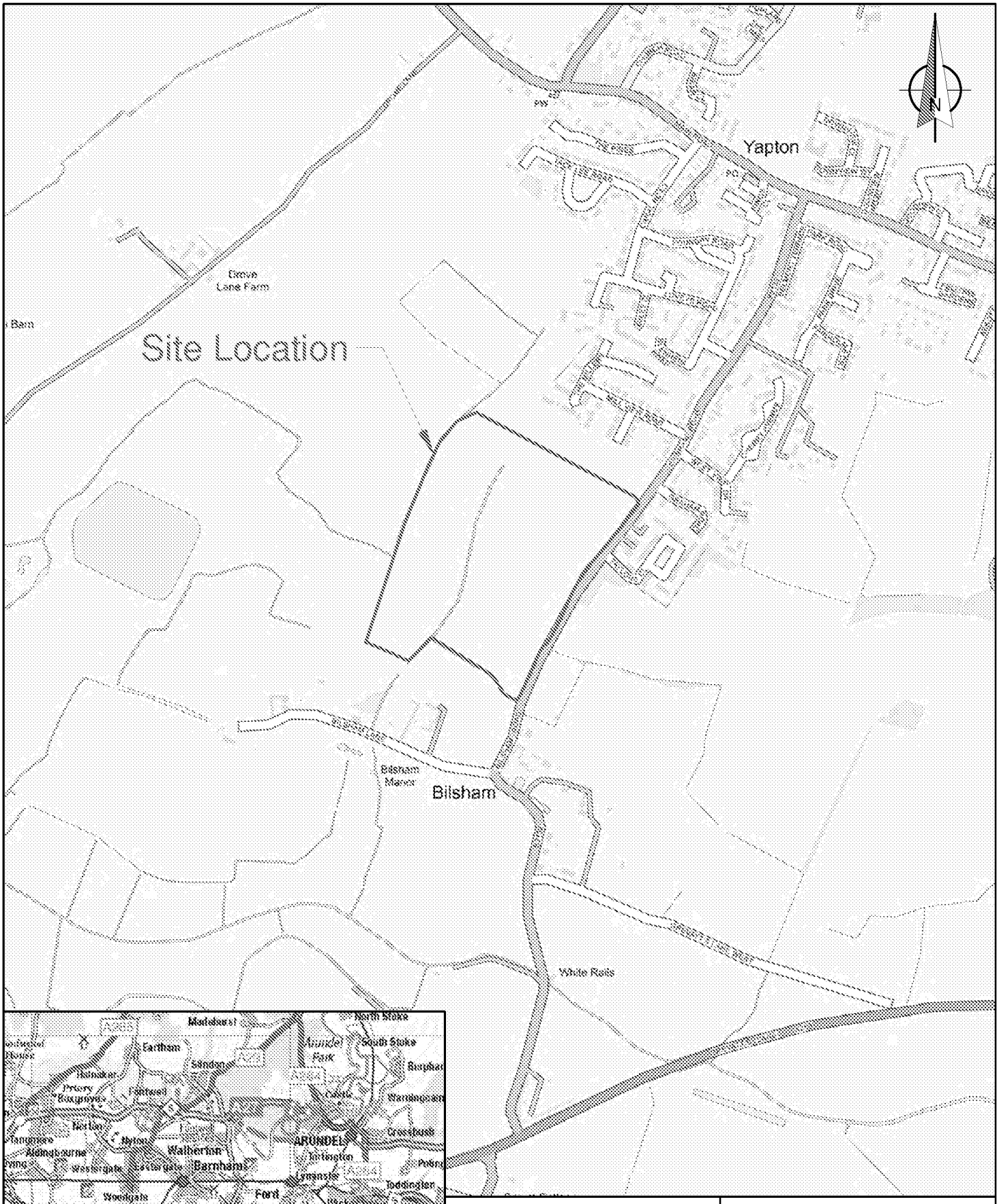
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APPENDIX A

DRAWINGS

ARUN DISTRICT COUNCIL Y

FM-Hn-D-104 Rev B L:\24200\GL24212 - Lambs Field\Drawings\CAD Files\GL24212 DR001.dwg





Client : Landlink Estates Limited	
Project : Lambs Field	
Job No : GL24212	Date : June 2021
Drawing No : GL24212 - DR001	
Scale : 1:10000 @ A4	
Drawn by : ES	Checked by : JK
Eastings : 497500	Northings : 102400

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Certificate Number 5933
ISO 9001, ISO 14001

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FM-HH-D-103 Rev B L:\24200\GL24212 - Lambs Field\Drawings\CAD Files\GL24212 DR002.dwg



Key :

Site Boundary

WS01 Dynamic Continuous Sampling Borehole

Notes :

Client : Landlink Estates Limited	
Project : Lambs Field	
Job No : GL24212	Date : June 2021
Drawing Title : Fieldwork Location Plan	
Drawing No : GL24212 - DR002	
Scale : 1:2000 @ A3	
Drawn by : ES	Checked by : JK
Eastings : 497500	Northings : 102400

Revision history

Rev	Date	Revision Data

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Certificate Number 5933
ISO 9001, ISO 14001

4031

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APPENDIX B

EXPLORATORY HOLE RECORDS



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DATA SHEET: GROUND INVESTIGATION METHODS

This datasheet provides basic details of the methods employed during the undertaking of ground investigations. Detailed method statements may be provided if requested or further information may be obtained from the relevant British Standards or other quoted publications. Investigations are generally carried out in accordance with BS 5930:2015, "Code of practice for ground investigations", BS 10175:2011+A1:2013, "Investigation of potentially contaminated sites – Code of Practice, and BS EN ISO 1997-2:2007, "Eurocode 7 – Geotechnical design – Part 2: Ground investigation and testing".

Prior to any excavation being undertaken, service plans are obtained and/or a service tracing team may be employed to locate and mark up service locations. A surface sweep using a cable avoidance tool (CAT) is undertaken, in order to avoid services and service inspection pits are generally hand excavated prior to commencing work with any mechanical plant.

DYNAMIC CONTINUOUS SAMPLING (WINDOW SAMPLER) BOREHOLES

The window sampler system comprises a series of varying diameter (100mm down to 36mm) steel tubes of either 1m length, and in the case of window (rather than windowless) having a slot or window cut along the side. The tubes are driven into the ground using a light percussive hammer attached to solid rods and withdrawn by use of a jack. The hammer may be machine mounted (wheeled or tracked) or for restricted access work, handheld. The soil sample is forced up into the tube during the driving, samples being obtained directly through the slot or window, or in the case of windowless, in plastic liners in the steel tube. The sampler generally achieves depths of around 5m in favourable soils. Use of a super heavy tracked rig allows samples to be retrieved in liners to depths of up to 10m in suitable ground conditions.

Sampling can be carried out from the boreholes in accordance with BS EN ISO 22475-1:2006 and SPT testing can be undertaken in accordance with BS EN ISO 22476-3:2005+A1:2011. In addition, small diameter standpipes/monitoring wells can be installed to facilitate the sampling and monitoring of gas and groundwater.

MONITORING WELL INSTALLATIONS

All types of boreholes can be fitted with monitoring wells to enable subsequent sampling and monitoring of groundwater and ground gas levels. Monitoring wells are usually of upvc or hdpe material, although steel may also be used in certain circumstances. Various diameters are available from 19mm upwards, depending upon the size of the borehole. 38mm or 50mm diameter wells are the most commonly used. Wells generally have slotted lower sections which may have a geomesh filter and then are surrounded with a filter medium such as single sized gravel. The upper sections are generally solid casing which is usually grouted to produce a seal with the surrounding ground. The top of the well is generally fitted with a removable cap that may include a gas valve to enable future gas monitoring. The installation is usually protected by a lockable cover set in a concrete base. Details of monitoring well installations and associated backfill are given on the relevant borehole records.

GROUNDWATER MONITORING

Groundwater monitoring is undertaken using an electronic dip meter, which records the depth to water in a standpipe or monitoring well. Alternatively, down-hole pressure transducers cab be utilised which can record variations over an extended period, which is particularly useful in monitoring variations due to tidal influences or when undertaking permeability tests or draw down tests or when undertaking soakaway testing. Where a non-aqueous phase liquid (e.g. floating hydrocarbon layer) is present, an interface meter is utilised to measure the thickness.

HAND EXCAVATED TRIAL PITS

Hand excavated pits may be undertaken for a variety of reasons, which include service observation pits, obtaining near surface samples, and examining foundations of existing buildings. Pits are excavated using a shovel, postholers and other suitable equipment. Shoring is necessary where pits are to be extended greater than 1.2mbgl and deep excavations may take a considerable time to undertake. Detailed records of hand excavated pits are only normally recorded where foundation depths and detailed information is required.

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Key to Site Investigation Records

Composite Materials, Soils and Lithology

Legend	Code	Description
	101	Topsoil
	102	Made Ground or Fill
	103	Asphalt
	104	Concrete
	201	Clay
	301	Silt
	401	Sand
	501	Gravel
	601	Peat
	701	Cobbles
	730	Boulders
	801	Mudstone
	802	Siltstone
	803	Sandstone
	804	Limestone or Dolostone
	805	Chalk
	806	Coal
	807	Breccia
	808	Conglomerate
	809	Fine Grained Igneous
	810	Medium Grained Igneous
	811	Coarse Grained Igneous
	812	Fine Grained Metamorphic
	813	Medium Grained Metamorphic
	814	Coarse Grained Metamorphic
	815	Pyroclastic
	816	Gypsum or Rocksalt
	817	Shale
	998	No Recovery
	999	Void

NOTE: Composite soil types are represented by combined legends. Each type will have its own code within the AGS data.

Backfill

Legend	Code	Description
	901	Sand Filter
	902	Gravel Filter
	908	Ballast
	903	Bentonite
	904	Grout
	905	Arisings
	906	Concrete
	912	Paving Slab
	907	Asphalt
	999	Void

Installations

Legend	Description
	Plain Pipe
	Slotted Pipe
	Piezometer
	Inclinometer
	Extensometer

Please refer to logs or AGS data for further details on installations and instruments used

In-Situ Testing

Prefix	Type	Comments
SPT(S) SPT(C)	Standard Penetration Test (S) Split Spoon (C) Solid Cone	Uncorrected test results at relevant start depth Hammer ID and Energy Ratio reported on log and in relevant AGS fields
HV	In-Situ Vane Test	Undrained shear strength reported in kPa Where at least 3 results obtained at same depth, average value may be reported
PP	In-Situ Hand Penetrometer Test	Undrained shear strength reported in kPa Where at least 3 results obtained at same depth, average value may be reported
PID	On-Site Volatile Headspace Testing by Photo-Ionisation Detector	Screening reported as ppmv Head space testing undertaken as per contract documents
PRM	In-Situ Permeability Test	Permeability (k) reported in m/s Please refer to individual test sheets for data and methodology

For Rotary Boreholes:

T.C.R. Total Core Recovery %

S.C.R. Solid Core Recovery %

R.Q.D. Rock Quality Designation %

Sample Information

Prefix	Type	Comments
D	Small disturbed sample	Nominally 1kg
B	Bulk disturbed sample	Nominally 5kg
LB	Large bulk disturbed sample	Nominally 20kg, for earthworks testing
U	Undisturbed sample - driven tube	For CP, nominally 100mm diameter, 450mm length For WS, nominally 38mm diameter, 100mm length Blows to drive tube and recovery found in remarks
UT	Undisturbed sample - thin walled driven tube	Nominally 100mm diameter, 450mm length Blows to drive tube and recovery found in remarks
P	Pushed piston sample	Nominally 100mm diameter, 1000mm length Recovery found in remarks
C	Core sample	-
AMAL	Amalgamated sample	Details of samples used noted in remarks as well as relevant AGS field
W	Water sample	Not for environmental testing purposes
ES	Environmental soil sample	Multiple containers used where appropriate
EW	Environmental water sample	Multiple containers used where appropriate

Water Observations

Legend	Description
	Water strike
	Standing water level after specified time

Details are provided on each log through the Water Strike table

AGS

Fm-Hn-R-####-Rev A

ARUN DISTRICT COUNCIL Y/3/22/OUT

Dynamic Continuous Sampling Borehole Record

WS01 | Sheet 1 of 1

harrisongroup ENVIRONMENTAL

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497402.57	N: 102261.89
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 19/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Depth (m)	Elevation (maOD) 1.87	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL. Firm brown sandy CLAY with occasional subangular to subrounded fine to coarse gravel of flint.			D1	0.20			
			ES1	0.20			
	0.35	1.52					
Light grey mottled orangish brown slightly gravelly very clayey fine to coarse SAND with pockets of slightly gravelly sandy clay. Gravel is subangular to subrounded fine to coarse chalk with occasional flint.			B1	0.50 - 1.00			
			D2	0.50			
			ES2	0.50			
From 1.20m: Becoming loose.			SPT(C)	1.20	N=7 (2,1/2,2,1,2)	- (Dry)	
			D3	1.20			
	1.50	0.37					
Light brown mottled light grey and orangish brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse chalk with occasional flint.			D4	1.80			
From 2.00m: Becoming light orangish brown and gravelly. Gravel is angular fine to coarse flint and chalk.			SPT(C)	2.00	N=20 (3,3/4,4,6,6)	- (2.00)	
			D5	2.20			
	2.60	-0.73					
Recovered as structureless CHALK composed of off-white and light brown slightly sandy gravelly SILT. Gravel is weak, low density, white angular to subrounded fine to coarse chalk. (Grade Dm)			D6	2.80			
At 3.00m: Becoming light grey.			SPT(C)	3.00	N=8 (3,2/2,2,2,2)	- (2.00)	
			D7	3.50			
At 4.00m: Occasional subangular to subrounded fine to coarse gravel of flint.			SPT(C)	4.00	N=15 (3,3/4,3,4,4)	- (2.00)	
			D8	4.50			
Borehole terminated at 5.00m: Hole collapse	5.00	-3.13					

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
102	1.20	2.00	0.80	100
87	2.00	3.00	0.90	90
77	3.00	4.00	0.30	30
67	4.00	5.00	0.30	30

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
19-05-2021	2.00					

Remarks:

1. Inspection pit from GL to 1.20m.
2. Hole collapsed from 5.00m to 4.25m during L04 sampling run.
3. Hole collapsed from 4.25m to 3.00m due to groundwater encountered.
4. Hole terminated early due to hole collapse.
5. Installation: 50mm standpipe GL to 1.00m plain, 1.00m to 3.00m slotted, fitted with gas tap, bung and flush cover.
6. Backfill: GL to 1.00m bentonite pellets, 1.00m to 3.00m gravel, 3.00m to 5.00m arisings.

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Dynamic Continuous Sampling Borehole Record

WS02 | Sheet 1 of 1

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497546.88	N: 102624.36
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 4.94	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL. Firm friable brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse flint.				D1	0.20			
		0.40	4.54					
Firm light brown mottled yellowish brown and orange sandy gravelly CLAY with low cobble content. Gravel is angular to subrounded fine to coarse flint and chalk. Cobbles are flint.				B1 D2	0.50 - 0.80 0.60			
				SPT(C)	1.20	N=7 (2,1/2,1,2,2)	- (Dry)	
		1.50	3.44					
Light brown mottled cream sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Possible weathered chalk)				D3	1.60			
At 1.70m: Possible pea shingle.		1.70	3.24					
Borehole terminated at 1.70m: Refusal								

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
102	1.20	1.70	0.50	100

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Approximate coordinates and ground levels only.
2. Inspection pit from GL to 1.20m.
2. Hole terminated early due to refusal.
3. Position moved to WS02A.
4. Backfill: GL to 1.70m arisings.

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Dynamic Continuous Sampling Borehole Record

WS02A | Sheet 1 of 2

harrisongroup ENVIRONMENTAL

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497552.89	N: 102618.35
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 4.94	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL. Firm friable brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse flint.				D1	0.20			
				ES1	0.20			
		0.40	4.54					
Firm brown sandy CLAY with occasional subangular to subrounded fine to coarse gravel of flint.				D2	0.60			
				ES2	0.60			
At 1.20m: Becoming mottled light grey.				SPT(C)	1.20	N=8 (1,1/2,2,2,2)	- (Dry)	
				D3	1.20			
		1.50	3.44					
Firm brown mottled grey sandy gravelly CLAY. Gravel is subangular to subrounded fine and medium flint with occasional chalk.				B1	1.60 - 1.80			
From 1.80m: Becoming slightly gravelly.				D4	1.60			
				SPT(C)	2.00	N=14 (3,3/3,3,4,4)	- (Dry)	
		2.10	2.84					
Light brown slightly gravelly very clayey fine to coarse SAND with pockets of light grey slightly gravelly silt. Gravel Is subangular to subrounded fine to coarse chalk.				D5	2.20			
				B2	2.30 - 2.50			
		2.80	2.14					
Medium dense light greyish brown gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse flint and chalk.				D6	2.90			
Fat 3.10m: Becoming orangish brown.				SPT(C)	3.00	N=25 (4,4/6,7,6,6)	- (Dry)	
				D7	3.50			▼
				SPT(C)	4.00	N=10 (5,4/3,2,3,2)	- (3.50)	
		4.80	0.14					
Recovered as structureless CHALK composed of cream slightly sandy slightly gravelly SILT. Gravel is weak, low density, white				SPT(C)	5.00	N=15 (4,4/4,4,3,4)	- (3.50)	
				D8	5.00			

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
102	1.20	2.00	0.80	100
87	2.00	3.00	0.95	95
77	3.00	4.00	0.70	70
67	4.00	5.00	0.20	20

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	3.50					

Remarks:

1. Approximate coordinates and ground levels only.
2. Inspection pit from GL to 1.20m.
3. Hole collapsed from 5.45m to 4.20m after L04 sampling run and SPT test.
4. Hole terminated early due to hole collapse.
5. Installation: 50mm standpipe GL to 1.00m plain, 1.00m to 4.20m slotted, fitted with gas tap, bung and flush cover.
6. Backfill: GL to 1.00m bentonite pellets, 1.00m to 4.20m gravel, 4.20m to 5.45m arisings.

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Dynamic Continuous Sampling Borehole Record

WS02A

Sheet 2 of 2

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497552.89	N: 102618.35
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD)	Sample / In-Situ Test Information			Casing (Water)	Installation & Backfill
			4.94	Type	Depth	Results / Remarks		
Recovered as structureless CHALK composed of cream slightly sandy slightly gravelly SILT. Gravel is weak, low density, white angular to subrounded fine to coarse chalk with flint. (Grade Dm)								
		5.45	-0.51					
Borehole terminated at 5.45m: Hole collapse								

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	3.50					

Remarks:

1. Approximate coordinates and ground levels only.
2. Inspection pit from GL to 1.20m.
3. Hole collapsed from 5.45m to 4.20m after L04 sampling run and SPT test.
4. Hole terminated early due to hole collapse.
5. Installation: 50mm standpipe GL to 1.00m plain, 1.00m to 4.20m slotted, fitted with gas tap, bung and flush cover.
6. Backfill: GL to 1.00m bentonite pellets, 1.00m to 4.20m gravel, 4.20m to 5.45m arisings.

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Dynamic Continuous Sampling Borehole Record

WS03

Sheet 1 of 2

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497769.75	N: 102500.93
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 6.08	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL. Firm friable brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse flint.				D1	0.20			
				ES1	0.20			
		0.40	5.68					
Firm light brown mottled light grey sandy CLAY with occasional subangular to subrounded fine to coarse flint, claystone and chalk.				D2	0.60			
				ES2	0.60			
At 1.00m: Occasional dark brown mottling.				SPT(C)	1.20	N=11 (2,2/2,3,3,3)	- (Dry)	
				D3	1.20			
				B1	1.40 - 1.60			
		1.60	4.48					
Firm light grey mottled light brown sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse flint with occasional chalk.				D4	1.80			
At 1.90m: Becoming slightly gravelly. Pockets of clayey fine to coarse sand.				SPT(C)	2.00	N=8 (2,2/2,2,2,2)	- (Damp)	
				B2	2.00 - 2.40			
				D5	2.50			
		2.90	3.18					
Soft light grey mottled orange sandy CLAY with occasional subangular to subrounded fine to coarse gravel of flint.				SPT(C)	3.00	N=10 (2,2/2,2,3,3)	- (Damp)	
				D6	3.00			
		3.60	2.48					
Firm grey sandy CLAY with occasional subangular to subrounded fine to coarse gravel of chalk.				D7	3.70			
		3.80	2.28					
Firm grey sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk with occasional flint.				SPT(C)	4.00	N=28 (4,6/6,6,8,8)	- (Damp)	
				D8	4.00			
		4.50	1.58					
Recovered as structureless CHALK composed of cream slightly sandy slightly gravelly SILT. Gravel is weak, low density, white angular to subrounded fine to coarse chalk. (Grade Dm)				D9	4.80			
				SPT(C)	5.00	N=15 (4,3/4,3,4,4)	- (Damp)	

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
102	1.20	2.00	0.80	100
87	2.00	3.00	1.00	100
77	3.00	4.00	0.80	80
67	4.00	5.00	0.80	80

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	1.90					Seepage

Remarks:

1. Inspection pit from GL to 1.20m.
2. Installation: 50m standpipe GL to 1.00m plain, 1.00m to 5.00m slotted, fitted with gas tap, bung and flush cover.
3. Backfill: GL to 1.00m bentonite pellets, 1.00m to 5.45m gravel.

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ARUN DISTRICT COUNCIL Y/3/22/OUT

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Dynamic Continuous Sampling Borehole Record

WS03

Sheet 2 of 2

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497769.75	N: 102500.93
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD)	Sample / In-Situ Test Information			Casing (Water)	Installation & Backfill
			6.08	Type	Depth	Results / Remarks		
Recovered as structureless CHALK composed of cream slightly sandy slightly gravelly SILT. Gravel is weak, low density, white angular to subrounded fine to coarse chalk. (Grade Dm)		5.45	0.63					
Borehole completed at 5.45m.								

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	1.90					Seepage

Remarks:

1. Inspection pit from GL to 1.20m.
2. Installation: 50m standpipe GL to 1.00m plain, 1.00m to 5.00m slotted, fitted with gas tap, bung and flush cover.
3. Backfill: GL to 1.00m bentonite pellets, 1.00m to 5.45m gravel.

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Dynamic Continuous Sampling Borehole Record

WS04

Sheet 1 of 2

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497301.52	N: 102385.64
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 4.29	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL. Firm friable brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse flint.				D1	0.20			
				ES1	0.20			
		0.40	3.89					
Firm light brown mottled light grey sandy CLAY with occasional subangular to subrounded fine to coarse flint and chalk.				D2	0.60			
				ES2	0.60			
				SPT(C)	1.20	N=12 (3,3/3,3,3,3)	- (Dry)	
				B1	1.20 - 1.50			
				D3	1.20			
		1.60	2.69					
Orangish brown mottled grey gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse flint and chalk.				D4	1.70			
		1.90	2.39					
Soft to firm light grey mottled light orangish brown slightly gravelly sandy CLAY with occasional pockets of fine to coarse sand. Gravel is subangular to subrounded fine to coarse flint and chalk.				SPT(C)	2.00	N=6 (2,2/1,2,1,2)	- (1.60)	
				D5	2.20			
At 2.50m: Flint becoming angular.								
From 2.60m to 2.70m: Becoming clayey fine to coarse sand.				D6	2.60			
		2.90	1.39					
Firm grey sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.				SPT(C)	3.00	N=23 (3,5/5,6,6,6)	- (1.60)	
				D7	3.00			
		3.20	1.09					
Firm to stiff grey slightly gravelly very sandy CLAY with light grey mottled orangish brown laminations. Gravel is subangular to subrounded fine to coarse chalk and flint.				D8	3.50			
				SPT(C)	4.00	N=43 (4,4/7,10,12,14)	- (1.60)	
				D9	4.00			
				D10	4.50			
				SPT(C)	4.70	N=40 (10,10/10,10,10,10)	- (1.60)	

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
102	1.20	2.00	0.80	100
87	2.00	3.00	0.90	90
77	3.00	4.00	0.50	50
67	4.00	4.70	0.30	43

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	1.60					

Remarks:

1. Inspection pit from GL to 1.20m.
2. Hole terminated early due to refusal.
3. Hole collapsed from 4.70m to 4.00m during L04 sampling run.
4. Installation: 50mm standpipe GL to 1.00m plain, 1.00m to 4.00m slotted, fitted with gas tap, bung and flush cover.
5. Backfill: GL to 1.00m bentonite pellets, 1.00m to 4.00m gravel, 4.00m to 5.15m arisings.

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Dynamic Continuous Sampling Borehole Record

WS04 | Sheet 2 of 2

harrisongroup ENVIRONMENTAL

Project ID: **GL24212**	Client: Landlink Estates Limited	E: 497301.52	N: 102385.64
Location: Lambs Field	Consultant: Campbell Reith Hill LLP	Date: 18/05/2021	
	Plant used: Archway Dart	SPT Hammer Serial No: DART312 (ER: 64%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 4.29	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
Firm to stiff grey slightly gravelly very sandy CLAY with light grey mottled orangish brown laminations. Gravel is subangular to subrounded fine to coarse chalk and flint.		5.15	-0.86					
Borehole terminated at 5.15m: Refusal								

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
18-05-2021	1.60					

Remarks:

1. Inspection pit from GL to 1.20m.
2. Hole terminated early due to refusal.
3. Hole collapsed from 4.70m to 4.00m during L04 sampling run.
4. Installation: 50mm standpipe GL to 1.00m plain, 1.00m to 4.00m slotted, fitted with gas tap, bung and flush cover.
5. Backfill: GL to 1.00m bentonite pellets, 1.00m to 4.00m gravel, 4.00m to 5.15m arisings.

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Drilled by: GEH Groundworks Specialists Ltd | Logged by: J. Blyth | Checked by: J. Keay | Fm-Hn-R-3068-Rev E

APPENDIX C

GAS AND GROUNDWATER MONITORING

ARUN DISTRICT COUNC



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Gas and PID Monitoring Results

AGS

Project ID:	GL24212	Client:	Landlink Estates Limited	Equipment	Model / Serial Number	Manufacturer's Calibration Date
Date:	25/05/2021	Location:	Lamb's Field	Gas Analyser:	GA5000 / G501752	03/03/2020
Weather conditions:	Cloudy and dry			PID:	Tiger Handheld VOC Detector / T-108275	03/07/2020

Pump Running Time (Purge): Standard 30 secs. Pump Running Time (Sampling): Standard 180 secs. Flow Details: 5 sec average for 1 min.

PID Details: "<" indicates reading is under the detection limit. ">" indicates reading is over the upper limit. "*" level to be determined.

Field engineer(s): W. Atkins

Remarks:

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Air Temp (°C)	Atmospheric Pressure 48Hrs Prior to Sampling (mB)	Atmospheric Pressure 24Hrs Prior to Sampling (mB)	Atmospheric Pressure 3Hrs Prior to Sampling (mB)	Atmospheric Pressure When Sampled (mB)	Relative Pressure (mB)	Peak PID (ppm)	Stable PID (ppm)	Methane (%)	Peak Methane (%)	Methane LEL (%)	Carbon Dioxide (%)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Flow (l/hr)	Remarks
WS01	PIPE1 (50mm)	25/05/2021	11:07:00	13.2	1010	1002	1014	1016	0.10	0.4	0.4	0.0	0.0	0.0	0.5	20.5	2.0	0.0	0.0	
			11:07:15							0.4		0.0			0.6	19.7	2.0	0.0	0.1	
			11:07:30							0.4		0.0			0.7	19.6	2.0	0.0	0.0	
			11:07:45							0.4		0.0			0.7	19.5	2.0	0.0	0.0	
			11:08:00							0.5		0.0			0.7	19.5	2.0	0.0	0.0	
			11:08:30							0.5		0.0			0.7	19.5	2.0	0.0	0.0	
			11:09:00							0.5		0.0			0.7	19.6	2.0	0.0	0.0	
			11:10:00							0.4		0.0			0.7	19.7	2.0	0.0	0.0	
WS02A	PIPE1 (50mm)	25/05/2021	10:44:00	13.2	1010	1002	1014	1015	-0.26	0.2	0.4	0.0	0.0	0.0	0.2	21.0	1.0	0.0	0.0	
			10:44:15							0.3		0.0			2.2	19.9	1.0	0.0	0.1	
			10:44:30							0.3		0.0			2.3	19.4	1.0	0.0	0.0	
			10:44:45							0.3		0.0			2.5	19.3	1.0	0.0	0.0	
			10:45:00							0.4		0.0			2.7	19.1	1.0	0.0	0.0	
			10:45:30							0.4		0.0			3.0	18.9	1.0	0.0	0.0	
			10:46:00							0.4		0.0			3.3	18.7	1.0	0.0	0.0	
			10:47:00							0.4		0.0			3.7	18.4	1.0	0.0	0.0	
WS03	PIPE1 (50mm)	25/05/2021	10:30:00	13.2	1010	1002	1014	1015	-0.36	0.2	0.2	0.0	0.0	0.0	0.1	21.0	0.0	0.0	0.0	
			10:30:15							0.2		0.0			0.7	21.0	0.0	0.0	0.0	
			10:30:30							0.3		0.0			0.7	20.6	0.0	0.0	0.0	
			10:30:45							0.3		0.0			0.7	20.6	0.0	0.0	0.0	
			10:31:00							0.3		0.0			0.8	20.6	0.0	0.0	0.0	
			10:31:30							0.3		0.0			0.8	20.5	0.0	0.0	0.0	
			10:32:00							0.2		0.0			1.0	20.4	0.0	0.0	0.0	
			10:33:00							0.2		0.0			1.3	20.2	0.0	0.0	0.0	
WS04	PIPE1 (50mm)	25/05/2021	11:26:00	13.2	1010	1002	1014	1017	0.00	0.2	0.2	0.0	0.0	0.0	0.2	20.6	2.0	0.0	-0.1	
			11:26:15							0.2		0.0			2.2	19.9	2.0	0.0	-0.3	
			11:26:30							0.2		0.0			2.2	19.3	1.0	0.0	-0.4	
			11:26:45							0.2		0.0			2.2	19.2	1.0	0.0	-0.4	
			11:27:00							0.2		0.0			2.2	19.2	1.0	0.0	-0.4	
			11:27:30							0.2		0.0			2.2	19.2	1.0	0.0	-0.4	
			11:28:00							0.2		0.0			2.2	19.3	1.0	0.0	-0.4	
			11:29:00							0.2		0.0			2.2	19.3	1.0	0.0	-0.4	

Kimberley Street, Norwich, NR2 2RJ

ARUN DISTRICT COUNCIL Y/3/22/OUT

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Groundwater Monitoring Results

AGS

Project ID:	GL24212	Client: Landlink Estates Limited	Weather conditions: Cloudy and dry
Date:	25/05/2021	Location: Lamb's Field	Ground conditions: -

[1] = All (m) depth measurements are recorded as meters from the top of the installation cover.

[2] = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.

[3] = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.

Field engineer(s): W. Atkins

Remarks:

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth[1] (mbgl)	LNAPL Depth (maOD)	Water Level[1] (mbgl)	Water Level (maOD)	DNAPL Depth[1] (mbgl)	DNAPL Depth (maOD)	Depth to base[1] (mbgl)	Depth to base (maOD)	Readings:													Sampling Method[2] (I, S, B, P)	Water Column (m)	Purged Volume[3] (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, tubidity, sheens)
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)	Water Pressure (psi)					
WS01	PIPE1 (50mm)	25/05/2021	11:07:00	1.87	N/E		1.20	0.67	N/E		2.68	-0.81														1.48			Interface meter recorded a solid beep from 1.88m, possibliy due to increased turbidity.
WS02A	PIPE1 (50mm)	25/05/2021	10:44:00	4.94	N/E		2.27	2.67	N/E		4.07	0.87														1.80			Interface meter recorded a solid beep from 2.95m, possibliy due to increased turbidity.
WS03	PIPE1 (50mm)	25/05/2021	10:30:00	6.08	N/E		2.33	3.75	N/E		5.05	1.03														2.72			Interface meter recorded a solid beep from 3.04m, possibliy due to increased turbidity.
WS04	PIPE1 (50mm)	25/05/2021	11:26:00	4.29	N/E		1.58	2.71	N/E		3.05	1.24														1.47			Interface meter recorded a solid beep from 2.27m, possibliy due to increased turbidity.

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Gas and PID Monitoring Results

AGS

Project ID:	GL24212	Client:	Landlink Estates Limited	Equipment	Model / Serial Number	Manufacturer's Calibration Date
Date:	08/06/2021	Location:	Lamb's Field	Gas Analyser:	GA5000 / G501752	03/03/2020
Weather conditions:	Sunny and dry			PID:	Tiger Handheld VOC Detector / T-108275	03/07/2020
Pump Running Time (Purge): Standard 30 secs. Pump Running Time (Sampling): Standard 180 secs. Flow Details: 5 sec average for 1 min.				PID Details: "<" indicates reading is under the detection limit. ">" indicates reading is over the upper limit. "*" level to be determined.		
Field engineer(s):	J. Blyth	Remarks:				

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Air Temp (°C)	Atmospheric Pressure 48Hrs Prior to Sampling (mB)	Atmospheric Pressure 24Hrs Prior to Sampling (mB)	Atmospheric Pressure 3Hrs Prior to Sampling (mB)	Atmospheric Pressure When Sampled (mB)	Relative Pressure (mB)	Peak PID (ppm)	Stable PID (ppm)	Methane (%)	Peak Methane (%)	Methane LEL (%)	Carbon Dioxide (%)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Flow (l/hr)	Remarks
WS01	PIPE1 (50mm)	08/06/2021	11:10:00	16.4	1025	1025	1024	1024	1.25	0.3	0.6	0.0	0.0	0.0	0.1	20.6	2.0	0.0	0.0	
			11:10:15							0.8		0.0			1.1	19.7	1.0	0.0	0.0	
			11:10:30							0.9		0.0			1.1	19.5	1.0	0.0	0.0	
			11:10:45							0.9		0.0			1.1	19.5	1.0	0.0	0.0	
			11:11:00							0.8		0.0			1.1	19.5	1.0	0.0	0.0	
			11:11:30							0.8		0.0			1.1	19.5	1.0	0.0	0.0	
			11:12:00							0.7		0.0			1.1	19.5	1.0	0.0	0.0	
			11:13:00							0.6		0.0			1.1	19.5	1.0	0.0	0.0	
WS02A	PIPE1 (50mm)	08/06/2021	10:30:00	16.4	1025	1025	1024	1024	0.10	0.4	0.5	0.0	0.0	0.0	4.5	19.8	1.0	0.0	0.0	
			10:30:15							0.6		0.0			4.6	17.7	1.0	0.0	0.0	
			10:30:30							0.6		0.0			4.6	17.5	1.0	0.0	0.0	
			10:30:45							0.6		0.0			4.6	17.4	1.0	0.0	0.0	
			10:31:00							0.6		0.0			4.6	17.4	1.0	0.0	0.0	
			10:31:30							0.6		0.0			4.6	17.4	1.0	0.0	0.0	
			10:32:00							0.5		0.0			4.6	17.4	1.0	0.0	0.0	
			10:33:00							0.5		0.0			4.6	17.4	1.0	0.0	0.0	
WS03	PIPE1 (50mm)	08/06/2021	10:00:00	16.5	1025	1024	1024	1024	0.26	0.6	0.7	0.0	0.0	0.0	2.4	19.3	1.0	0.0	0.0	
			10:00:15							0.7		0.0			2.4	18.8	1.0	0.0	0.0	
			10:00:30							0.8		0.0			2.4	18.2	1.0	0.0	0.0	
			10:00:45							0.8		0.0			2.4	18.1	1.0	0.0	0.0	
			10:01:00							0.8		0.0			2.4	18.1	1.0	0.0	0.0	
			10:01:30							0.8		0.0			2.4	18.1	1.0	0.0	0.0	
			10:02:00							0.8		0.0			2.4	18.1	1.0	0.0	0.0	
			10:03:00							0.7		0.0			2.4	18.1	1.0	0.0	0.0	
WS04	PIPE1 (50mm)	08/06/2021	10:50:00	16.4	1025	1025	1024	1024	0.44	0.4	0.6	0.0	0.0	0.0	2.2	19.9	1.0	0.0	0.0	
			10:50:15							0.7		0.0			2.3	18.6	1.0	0.0	0.0	
			10:50:30							0.7		0.0			2.3	18.5	1.0	0.0	0.0	
			10:50:45							0.7		0.0			2.3	18.5	1.0	0.0	0.0	
			10:51:00							0.7		0.0			2.3	18.5	1.0	0.0	0.0	
			10:51:30							0.6		0.0			2.3	18.5	1.0	0.0	0.0	
			10:52:00							0.6		0.0			2.3	18.5	1.0	0.0	0.0	
			10:53:00							0.6		0.0			2.3	18.5	1.0	0.0	0.0	

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Groundwater Monitoring Results

AGS

Project ID:	GL24212	Client: Landlink Estates Limited	Weather conditions: Sunny and dry
Date:	08/06/2021	Location: Lamb's Field	Ground conditions: -

[1] = All (m) depth measurements are recorded as meters from the top of the installation cover.

[2] = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.

[3] = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.

Field engineer(s): J. Blyth

Remarks:

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth[1] (mbgl)	LNAPL Depth (maOD)	Water Level[1] (mbgl)	Water Level (maOD)	DNAPL Depth[1] (mbgl)	DNAPL Depth (maOD)	Depth to base[1] (mbgl)	Depth to base (maOD)	Readings:												Sampling Method[2] (I, S, B, P)	Water Column (m)	Purged Volume[3] (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, tubidity, sheens)
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)	Water Pressure (psi)					
WS01	PIPE1 (50mm)	08/06/2021	11:10:00	1.87			1.32	0.55			2.80	-0.93														1.48			
WS02A	PIPE1 (50mm)	08/06/2021	10:30:00	4.94			2.33	2.61			4.12	0.82														1.79			
WS03	PIPE1 (50mm)	08/06/2021	10:00:00	6.08			2.39	3.69			5.01	1.07														2.62			
WS04	PIPE1 (50mm)	08/06/2021	10:50:00	4.29			1.68	2.61			3.23	1.06														1.55			

ARUN DISTRICT COUNCIL Y/3/22/OUT

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Gas and PID Monitoring Results

AGS

Project ID:	GL24212	Client:	Landlink Estates Limited	Equipment	Model / Serial Number	Manufacturer's Calibration Date
Date:	16/06/2021	Location:	Lamb's Field	Gas Analyser:	GA5000 / G501752	03/03/2020
Weather conditions:	Sunny and dry			PID:	Tiger Handheld VOC Detector / T-108275	03/07/2020
Pump Running Time (Purge): Standard 30 secs. Pump Running Time (Sampling): Standard 180 secs. Flow Details: 5 sec average for 1 min.				PID Details: "<" indicates reading is under the detection limit. ">" indicates reading is over the upper limit. "*" level to be determined.		
Field engineer(s):	J. Blyth	Remarks:				

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Air Temp (°C)	Atmospheric Pressure 48Hrs Prior to Sampling (mB)	Atmospheric Pressure 24Hrs Prior to Sampling (mB)	Atmospheric Pressure 3Hrs Prior to Sampling (mB)	Atmospheric Pressure When Sampled (mB)	Relative Pressure (mB)	Peak PID (ppm)	Stable PID (ppm)	Methane (%)	Peak Methane (%)	Methane LEL (%)	Carbon Dioxide (%)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Flow (l/hr)	Remarks
WS01	PIPE1 (50mm)	16/06/2021	11:30:00	21.7	1020	1021	1012	1013	-0.10	0.5	0.7	0.0	0.0	0.0	1.2	19.4	2.0	0.0	0.0	
			11:30:15							1.2		0.0			1.2	19.0	2.0	1.0	0.0	
			11:30:30							1.2		0.0			1.2	18.9	2.0	1.0	0.0	
			11:30:45							1.2		0.0			1.2	18.9	2.0	1.0	0.0	
			11:31:00							1.1		0.0			1.2	18.9	2.0	1.0	0.0	
			11:31:30							0.9		0.0			1.2	18.9	2.0	1.0	0.0	
			11:32:00							0.8		0.0			1.2	18.9	2.0	1.0	0.0	
			11:33:00							0.7		0.0			1.2	18.9	2.0	1.0	0.0	
WS02A	PIPE1 (50mm)	16/06/2021	11:00:00	20.0	1021	1021	1012	1012	-0.03	0.4	0.5	0.0	0.0	0.0	0.1	20.0	2.0	0.0	0.0	
			11:00:15							0.7		0.0			4.3	17.6	1.0	0.0	0.0	
			11:00:30							0.7		0.0			4.3	17.6	1.0	0.0	0.0	
			11:00:45							0.7		0.0			4.3	17.5	1.0	0.0	0.0	
			11:01:00							0.7		0.0			4.3	17.5	1.0	0.0	0.0	
			11:01:30							0.7		0.0			4.3	17.5	1.0	0.0	0.0	
			11:02:00							0.6		0.0			4.3	17.5	1.0	0.0	0.0	
			11:03:00							0.5		0.0			4.3	17.5	1.0	0.0	0.0	
WS03	PIPE1 (50mm)	16/06/2021	10:30:00	20.0	1021	1021	1012	1012	0.80	0.3	0.8	0.0	0.0	0.0	2.8	20.6	1.0	0.0	0.0	
			10:30:15							1.1		0.0			2.8	18.4	1.0	0.0	0.0	
			10:30:30							1.2		0.0			2.8	18.0	1.0	0.0	0.0	
			10:30:45							1.2		0.0			2.8	18.0	1.0	0.0	0.0	
			10:31:00							1.2		0.0			2.8	18.0	1.0	0.0	0.0	
			10:31:30							1.1		0.0			2.8	18.0	1.0	0.0	0.0	
			10:32:00							1.0		0.0			2.8	17.9	1.0	0.0	0.0	
			10:33:00							0.8		0.0			2.8	17.9	1.0	0.0	0.0	
WS04	PIPE1 (50mm)	16/06/2021	12:00:00	21.7	1020	1021	1012	1013	0.09	0.5	0.8	0.0	0.0	0.0	1.9	18.0	2.0	1.0	0.0	
			12:00:15							0.8		0.0			1.9	17.8	2.0	1.0	0.0	
			12:00:30							1.0		0.0			1.9	17.7	2.0	1.0	0.0	
			12:00:45							0.9		0.0			2.0	17.7	2.0	1.0	0.0	
			12:01:00							0.9		0.0			2.0	17.7	2.0	1.0	0.0	
			12:01:30							0.8		0.0			2.0	17.7	2.0	1.0	0.0	
			12:02:00							0.8		0.0			2.0	17.7	2.0	1.0	0.0	
			12:03:00							0.8		0.0			2.0	17.7	2.0	1.0	0.0	

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Groundwater Monitoring Results

AGS

Project ID:	GL24212	Client: Landlink Estates Limited	Weather conditions: Sunny and dry
Date:	16/06/2021	Location: Lamb's Field	Ground conditions: -

[1] = All (m) depth measurements are recorded as meters from the top of the installation cover.

[2] = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.

[3] = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.

Field engineer(s): J. Blyth

Remarks:

Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth[1] (mbgl)	LNAPL Depth (maOD)	Water Level[1] (mbgl)	Water Level (maOD)	DNAPL Depth[1] (mbgl)	DNAPL Depth (maOD)	Depth to base[1] (mbgl)	Depth to base (maOD)	Readings:												Sampling Method[2] (I, S, B, P)	Water Column (m)	Purged Volume[3] (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, tubidity, sheens)
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)	Water Pressure (psi)					
WS01	PIPE1 (50mm)	16/06/2021	11:30:00	1.87			1.30	0.57			2.70	-0.83													B	1.40		EW1-SP1	Slightly cloudy, white/orange.
WS02A	PIPE1 (50mm)	16/06/2021	11:00:00	4.94			2.38	2.56			4.11	0.83													B	1.73		EW1-SP1	Slightly cloudy, white/orange.
WS03	PIPE1 (50mm)	16/06/2021	10:30:00	6.08			2.41	3.67			5.06	1.02													B	2.65		EW1-SP1	Cloudy, light orangish brown.
WS04	PIPE1 (50mm)	16/06/2021	12:00:00	4.29			1.84	2.45			3.24	1.05													B	1.40		EW1-SP1	Cloudy, light orangish brown.

Kimberley Street, Norwich, NR2 2RJ

ARUN DISTRICT COUNCIL Y/3/22/OUT

APPENDIX D

GEOTECHNICAL LABORATORY TESTING

ARUN DISTRICT COUNCIL Y/3[redacted]

harrisontesting
SERVICES

Harrison Testing Services
Unit 1, Alston Road
Hellesdon Park Industrial Estate
Norwich NR6 5DS
[redacted]

Harrison Group Environmental
12, Waterways Business Centre
Navigation Drive
Enfield
EN3 6JJ

For the attention of: John Keay

Project:	**Lamb's Field**	Samples received:	24/05/2021
Report No:	**GL24212-01**	Instruction received:	24/05/2021
Your Ref:	**GL24212**	Testing commenced:	02/06/2021

Please find results attached as summarised below.

Item	Description	Quantity	UKAS Accredited
1	Moisture Content	12	Yes
2	Liquid & Plastic Limits	10	Yes
3	Particle Size Distribution - Wet Sieve Method	4	Yes
4	Particle Size Distribution - Pipette Sedimentation Method	4	Yes

Only those results indicated in this report are UKAS accredited and any opinion or interpretations expressed are outside the scope of UKAS accreditation.

Unless we are notified to the contrary, samples will be disposed after a period of one month from this date.

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Issued by: [redacted]
M. Willson
Laboratory Manager

Date Issued:
21 June 2021

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DETERMINATION OF MOISTURE CONTENT

BS 1377 : Part 2 : 1990 : Clause 3.2

Project Name:	**Lamb's Field**	Project Number:
Client Name:	**Landlink Estates Limited**	**GL24212-01**

Location	Depth (m)	Sample Ref	Sample Description	Moisture Content (%)	Remarks
WS01	1.80	D4	Grey brown mottled light grey and orange brown slightly gravelly slightly sandy CLAY. Gravel is of chalk.	19	
WS02	0.60	D2	Brown and grey brown slightly gravelly CLAY. Gravel is of chalk and flint.	18	
WS02	1.60	D3	Brown mottled grey sandy CLAY.	21	
WS02A	1.20	D3	Light grey and brown slightly gravelly CLAY. Gravel is of chalk and flint.	16	
WS02A	1.60	D4	Brown and dark grey slightly gravelly slightly sandy CLAY. Gravel is of chalk.	14	
WS02A	2.90	D6	Grey brown slightly gravelly sandy silty CLAY. Gravel is of flint.	16	
WS02A	5.00	D8	Structureless CHALK composed of white stained light grey brown slightly gravelly slightly sandy SILT. Gravel is of chalk.	20	
WS03	1.80	D4	Grey brown mottled light grey gravelly slightly sandy CLAY. Gravel is of flint.	13	
WS03	3.00	D6	Light grey mottled orange brown slightly gravelly CLAY. Gravel is of chalk.	23	
WS03	4.80	D9	Structureless CHALK composed of white and light blue grey slightly gravelly slightly sandy SILT. Gravel is of chalk.	24	

Notes:

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Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 2

DETERMINATION OF MOISTURE CONTENT

BS 1377 : Part 2 : 1990 : Clause 3.2

Project Name:	**Lamb's Field**	Project Number:
Client Name:	**Landlink Estates Limited**	**GL24212-01**

Location	Depth m	Sample Ref	Sample Description	Moisture Content %	Remarks
WS04	1.20	D3	Light brown and brown mottled light grey brown CLAY.	16	
WS04	2.20	D5	Light brown and light grey brown and light grey CLAY.	20	

Notes:

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	MW M. Willson Laboratory Manager	18/06/2021	2 of 2

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DETERMINATION OF LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS1377 : Part 2 : 1990

Project Name:	**Lamb's Field**	Project Number:
Client Name:	**Landlink Estates Limited**	**GL24212-01**

Location	Depth m	Sample Ref	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage passing 425µm %	Classification	Sample Description
WS01	1.80	D4	19	24	15	9	96	CL	Grey brown mottled light grey and orange brown slightly gravelly slightly sandy CLAY. Gravel is of chalk.
WS02	0.60	D2	18	31	17	14	92	CL	Brown and grey brown slightly gravelly CLAY. Gravel is of chalk and flint.
WS02A	1.20	D3	16	29	16	13	94	CL	Light grey and brown slightly gravelly CLAY. Gravel is of chalk and flint.
WS02A	2.90	D6	16	19	14	5	81	ML	Grey brown slightly gravelly sandy silty CLAY. Gravel is of flint.
WS02A	5.00	D8	20	22	16	6	69	ML	Structureless CHALK composed of white stained light grey brown slightly gravelly slightly sandy SILT. Gravel is of chalk.
WS03	1.80	D4	13	23	15	8	76	CL	Grey brown mottled light grey gravelly slightly sandy CLAY. Gravel is of flint.
WS03	3.00	D6	23	28	18	10	95	CL	Light grey mottled orange brown slightly gravelly CLAY. Gravel is of chalk.
WS03	4.80	D9	24	27	23	4	74	ML	Structureless CHALK composed of white and light blue grey slightly gravelly slightly sandy SILT. Gravel is of chalk.
WS04	1.20	D3	16	29	17	12	100	CL	Light brown and brown mottled light grey brown CLAY.
WS04	2.20	D5	20	24	15	9	100	CL	Light brown and light grey brown and light grey CLAY.

Notes:

1) This summary sheet is provided for convenience and in no way replaces individual test result sheets which shall, without exception, be regarded as the definitive result. Please refer to the individual test result sheets for the respective methods used.
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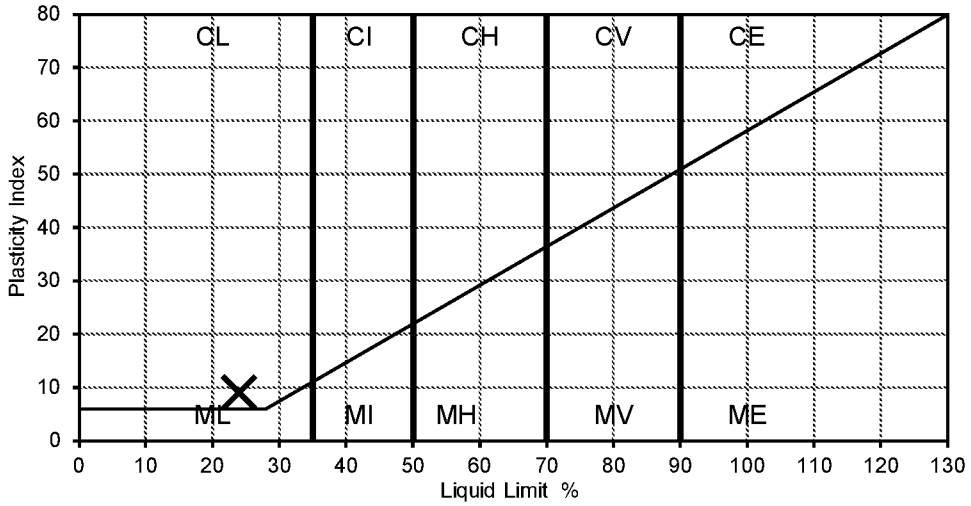
UKAS TESTING 4031

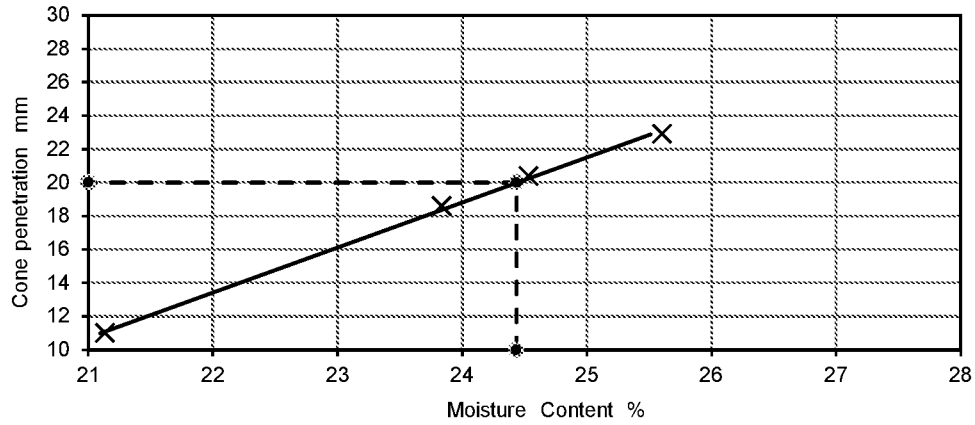
Remarks	Approved	Date	Sheet No.:
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LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS01
Sample Description:	Grey brown mottled light grey and orange brown slightly gravelly slightly sandy CLAY. Gravel is of chalk.	Sample Depth (m)	1.80
		Sample Reference	D4





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	19 %
	Percentage Passing 425µm sieve:	96 %
	Liquid Limit:	24 %
	Plastic Limit:	15 %
	Plasticity Index:	9
	Liquidity Index:	0.44
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	9

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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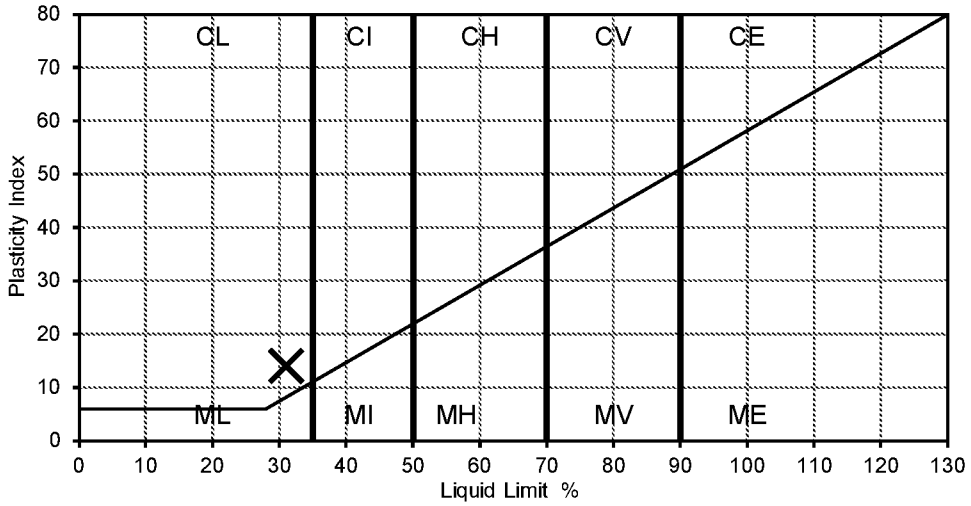
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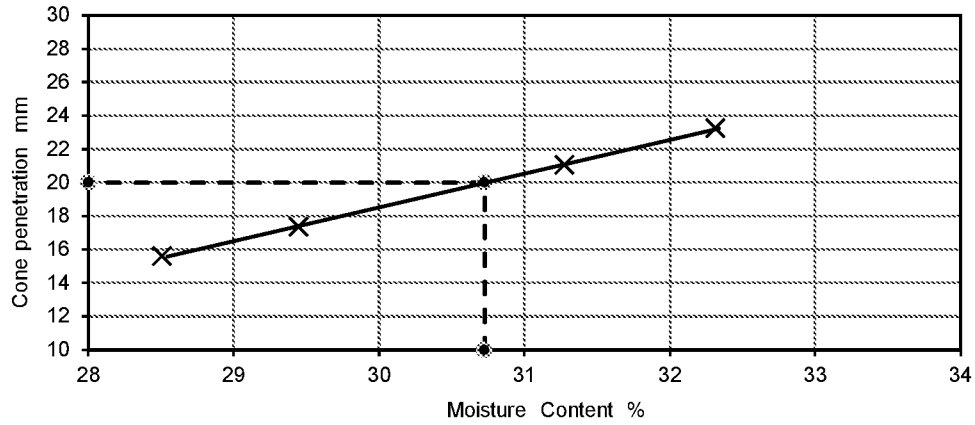
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LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS02
Sample Description:	Brown and grey brown slightly gravelly CLAY. Gravel is of chalk and flint.	Sample Depth (m)	0.60
		Sample Reference	D2





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	18 %
	Percentage Passing 425µm sieve:	92 %
	Liquid Limit:	31 %
	Plastic Limit:	17 %
	Plasticity Index:	14
	Liquidity Index:	0.07
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	13

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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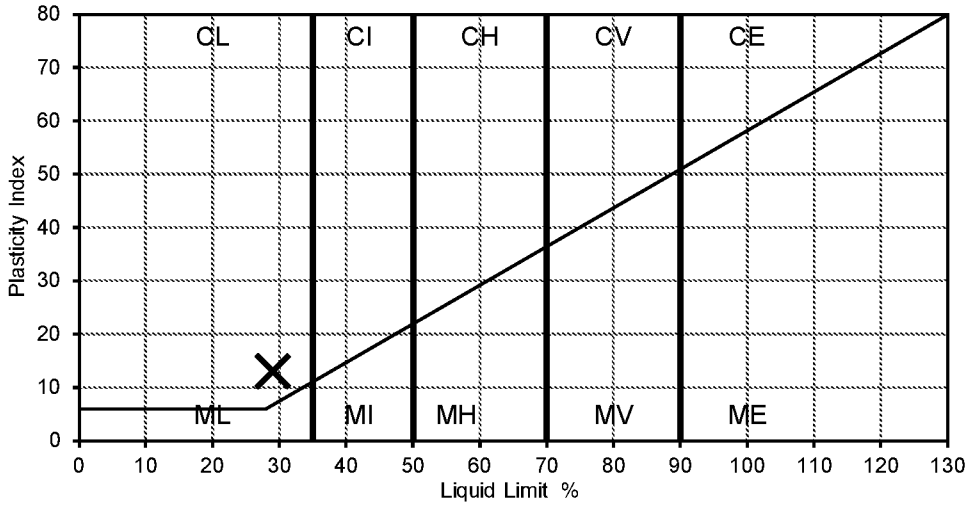
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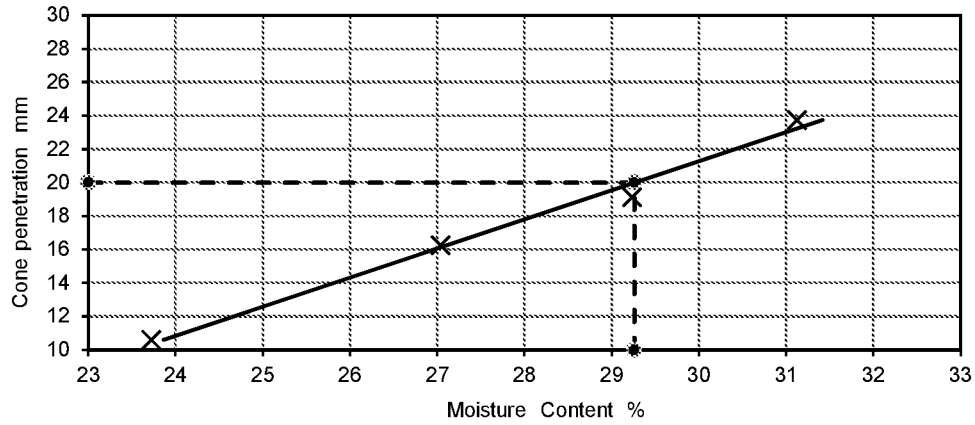
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LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS02A
Sample Description:	Light grey and brown slightly gravelly CLAY. Gravel is of chalk and flint.	Sample Depth (m)	1.20
		Sample Reference	D3





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	16 %
	Percentage Passing 425µm sieve:	94 %
	Liquid Limit:	29 %
	Plastic Limit:	16 %
	Plasticity Index:	13
	Liquidity Index:	0.00
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	12

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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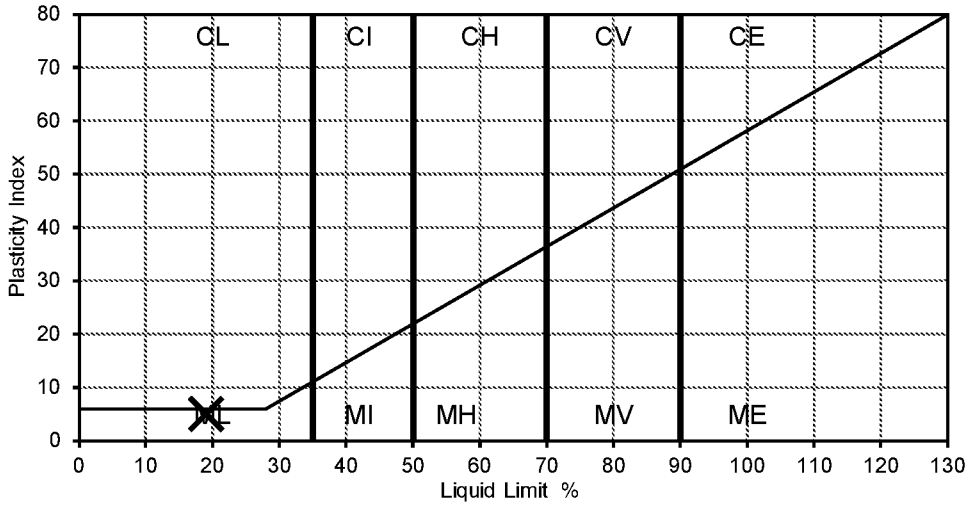
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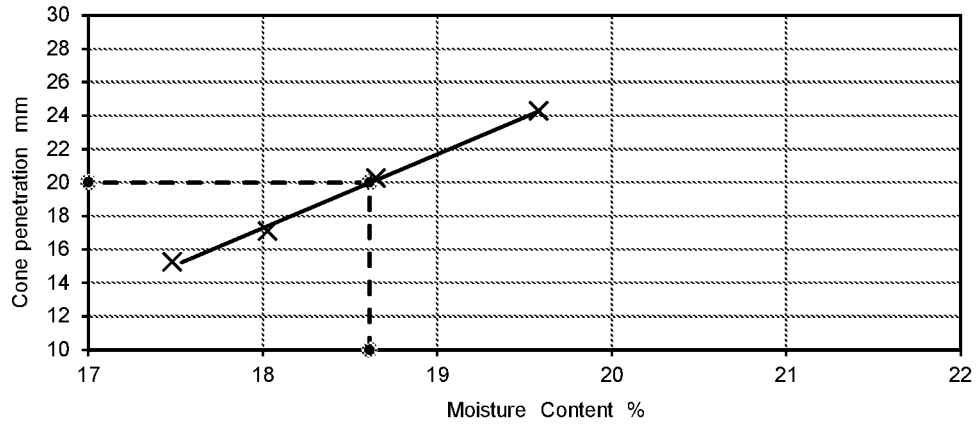
Remarks	Approved	Date	Sheet No.:
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LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS02A
Sample Description:	Grey brown slightly gravelly sandy silty CLAY. Gravel is of flint.	Sample Depth (m)	2.90
		Sample Reference	D6





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	16 %
	Percentage Passing 425µm sieve:	81 %
	Liquid Limit:	19 %
	Plastic Limit:	14 %
	Plasticity Index:	5
	Liquidity Index:	0.40
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	4

Notes:

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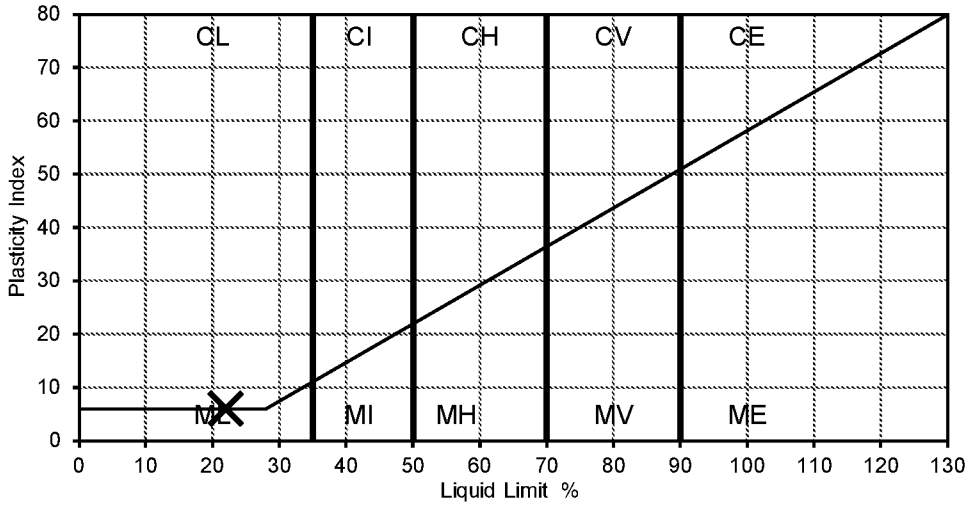
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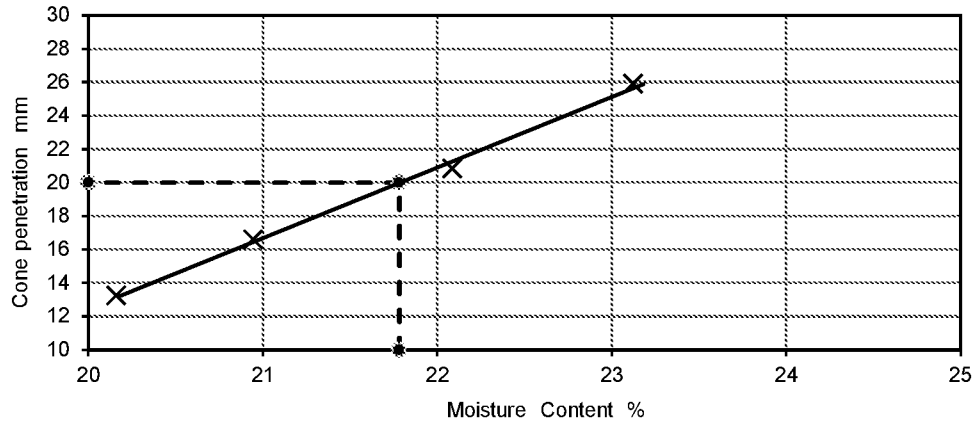
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LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS02A
Sample Description:	Structureless CHALK composed of white stained light grey brown slightly gravelly slightly sandy SILT. Gravel isof chalk.	Sample Depth (m)	5.00
		Sample Reference	D8





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	20 %
	Percentage Passing 425µm sieve:	69 %
	Liquid Limit:	22 %
	Plastic Limit:	16 %
	Plasticity Index:	6
	Liquidity Index:	0.67
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	4

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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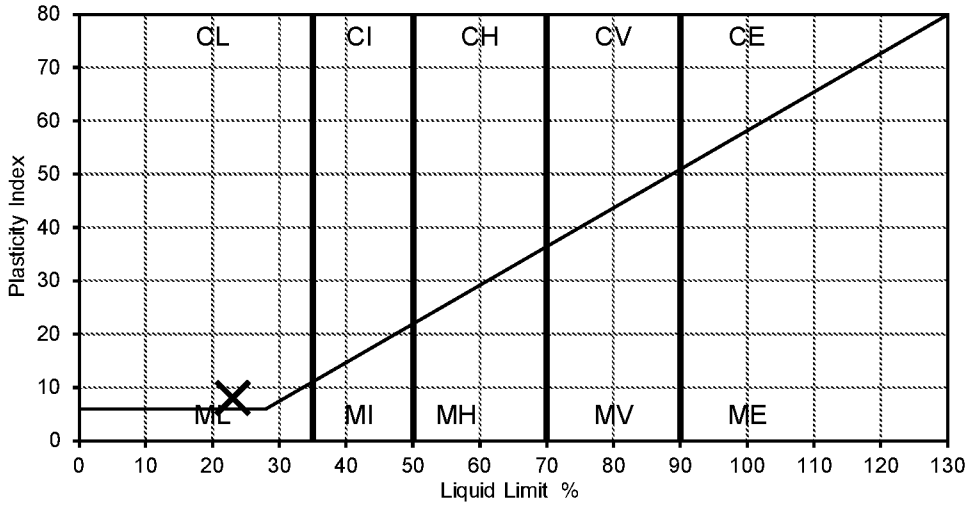
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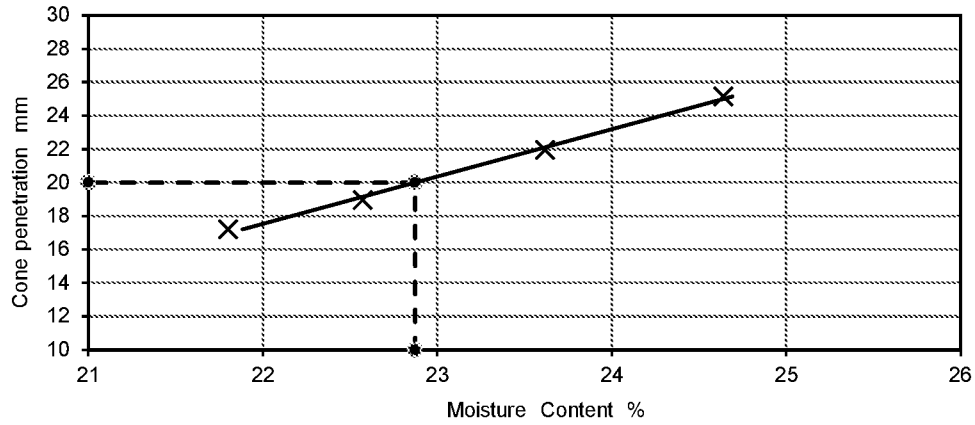
Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS03
Sample Description:	Grey brown mottled light grey gravelly slightly sandy CLAY. Gravel is of flint.	Sample Depth (m)	1.80
		Sample Reference	D4





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	13 %
	Percentage Passing 425µm sieve:	76 %
	Liquid Limit:	23 %
	Plastic Limit:	15 %
	Plasticity Index:	8
	Liquidity Index:	-0.25
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	6

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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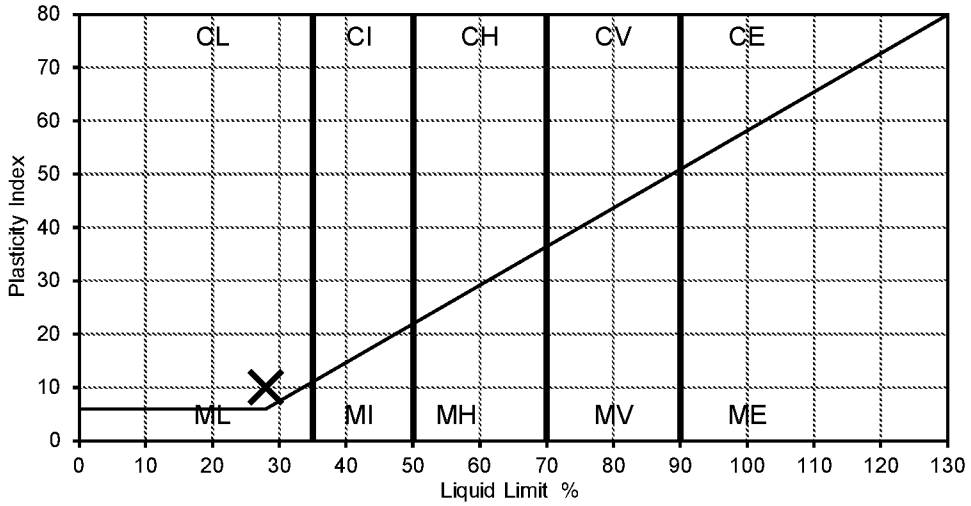
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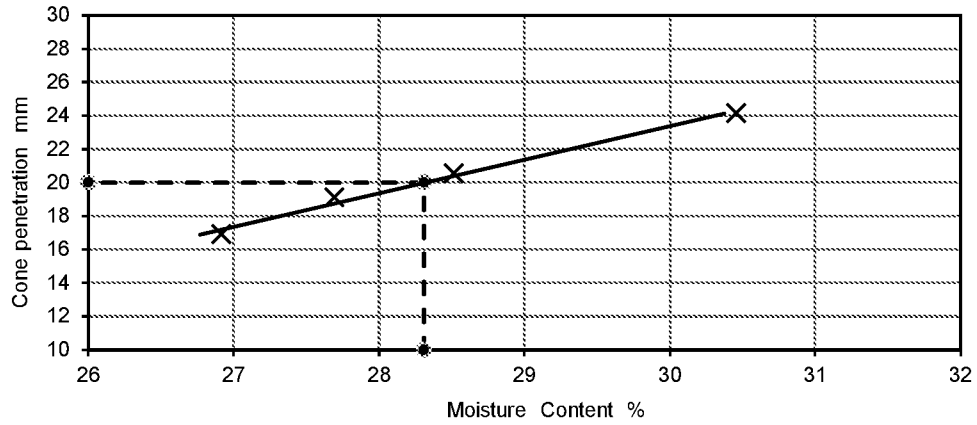
Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS03
Sample Description:	Light grey mottled orange brown slightly gravelly CLAY. Gravel is of chalk.	Sample Depth (m)	3.00
		Sample Reference	D6





Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	23 %
	Percentage Passing 425µm sieve:	95 %
	Liquid Limit:	28 %
	Plastic Limit:	18 %
	Plasticity Index:	10
	Liquidity Index:	0.50
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	10

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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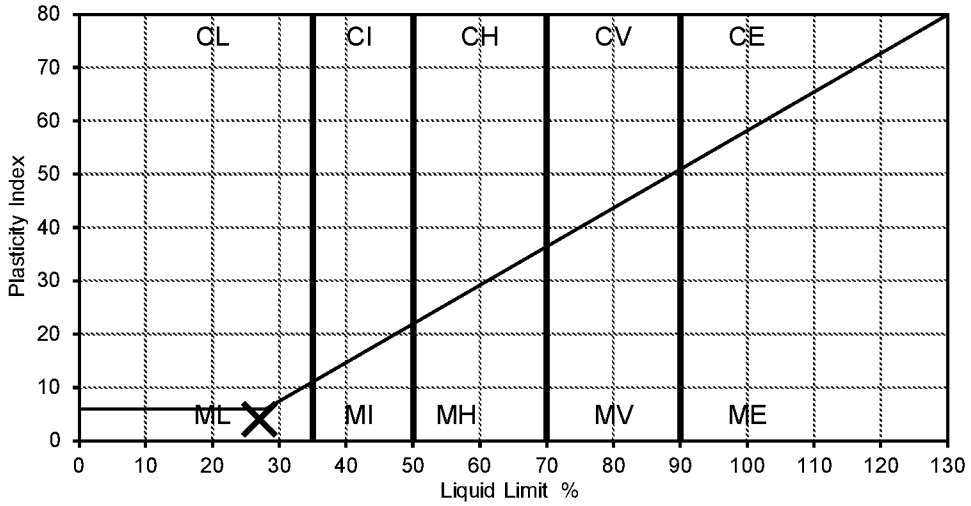
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Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.4 one point LL and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS03
Sample Description:	Structureless CHALK composed of white and light blue grey slightly gravelly slightly sandy SILT. Gravel is of chalk.	Sample Depth (m)	4.80
		Sample Reference	D9



Preparation: Material was washed and oven dried at below 50°C

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	24 %
	Percentage Passing 425µm sieve:	74 %
	Liquid Limit:	27 %
	Plastic Limit:	23 %
	Plasticity Index:	4
	Liquidity Index:	0.25
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	3

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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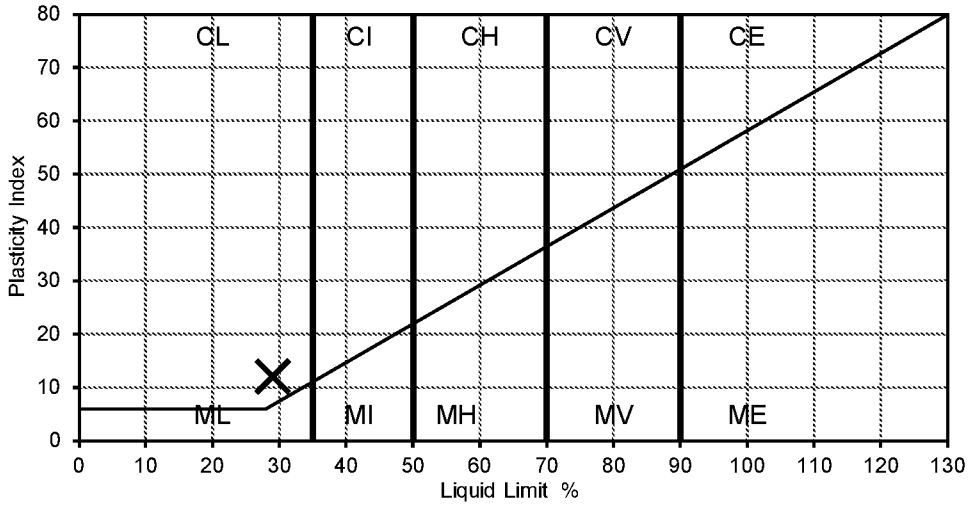
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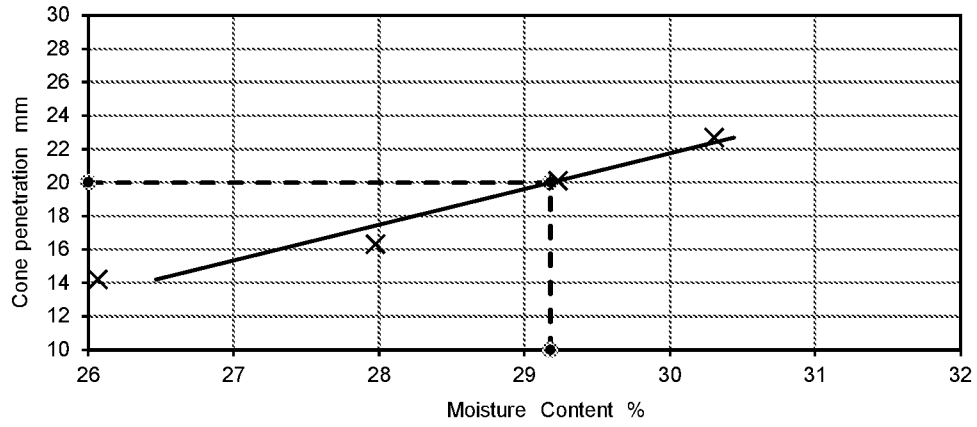
Remarks	Approved	Date	Sheet No.:
Liquid limit determined by single point method due to insufficient sample for definitive test.	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS04
Sample Description:	Light brown and brown mottled light grey brown CLAY.	Sample Depth (m)	1.20
		Sample Reference	D3





Preparation: Material was natural

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	16 %
	Percentage Passing 425µm sieve:	100 %
	Liquid Limit:	29 %
	Plastic Limit:	17 %
	Plasticity Index:	12
	Liquidity Index:	-0.08
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	12

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
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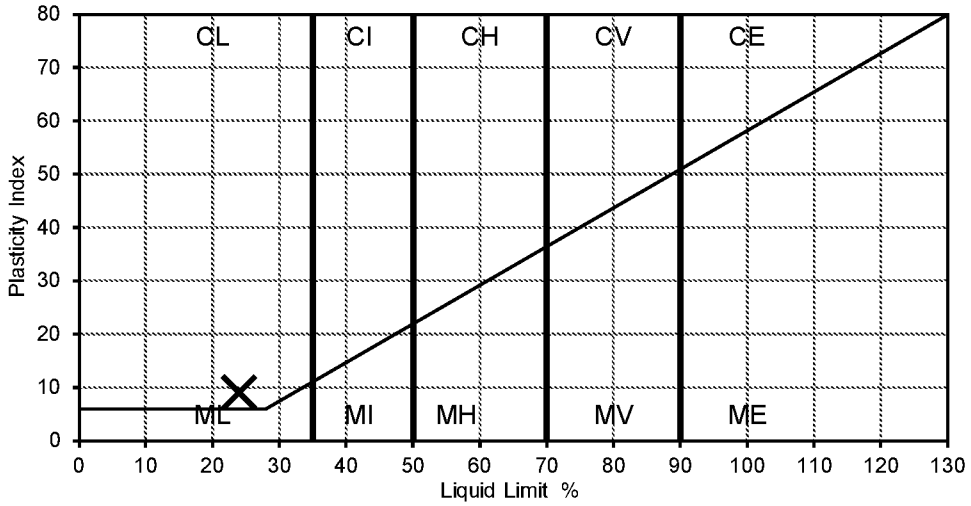
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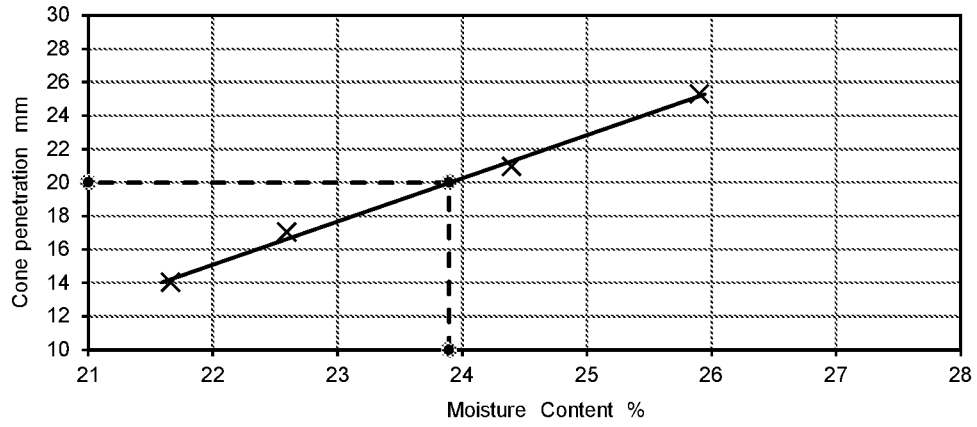
Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX, & LIQUIDITY INDEX

BS 1377 : Part 2 : 1990, clause 4.3 and 5

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS04
Sample Description:	Light brown and light grey brown and light grey CLAY.	Sample Depth (m)	2.20
		Sample Reference	D5





Preparation: Material was natural

Results:		
	As Received Moisture Content: (BS1377 : Part 2 : Clause 3 : 1990)	20 %
	Percentage Passing 425µm sieve:	100 %
	Liquid Limit:	24 %
	Plastic Limit:	15 %
	Plasticity Index:	9
	Liquidity Index:	0.56
	Modified Plasticity Index: (NHBC Standards Chapter 4.2)	9

Notes:

1) Modified Plasticity Index: (NHBC Standards Chapter 4.2) not covered by UKAS accreditation.
2) Unless we are notified to the contrary, samples will be disposed after a period of one month from this date.
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4) Only those results indicated in this report are UKAS accredited and any opinion or interpretations expressed are outside the scope of UKAS accreditation.

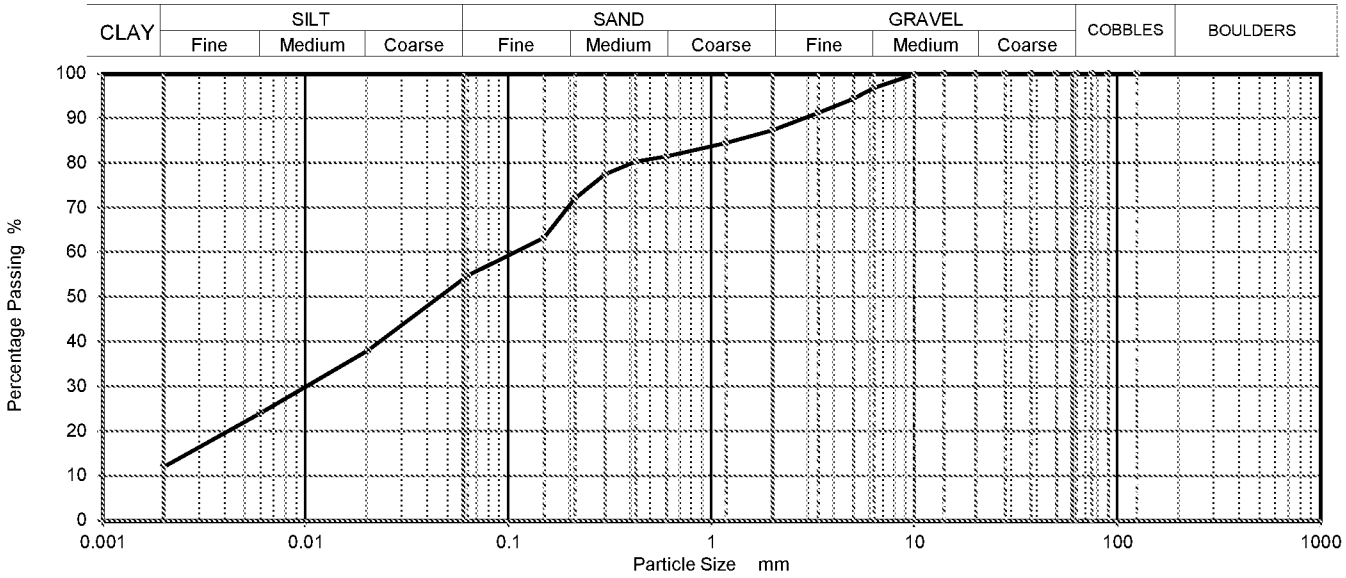
4031

Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

BS1377:Part 2:1990, clauses 9.2 and 9.4

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS01
Sample Description:	Grey mottled orange brown slightly gravelly slightly sandy clayey SILT. Gravel is of chalk.	Sample Depth (m)	0.50
		Sample Reference	D2



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	38
90	100	0.0060	24
75	100	0.0020	12
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	97		
5	94		
3.35	91		
2	87		
1.18	84		
0.6	81	Particle density	(assumed)
0.425	80	2.65	Mg/m3
0.3	77		
0.212	72		
0.15	63		
0.063	55		

Sample Proportions	% dry mass
Very coarse	0
Gravel	13
Sand	33
Silt	42
Clay	12

Grading Analysis		
D100	mm	
D60	mm	0.108
D30	mm	0.010
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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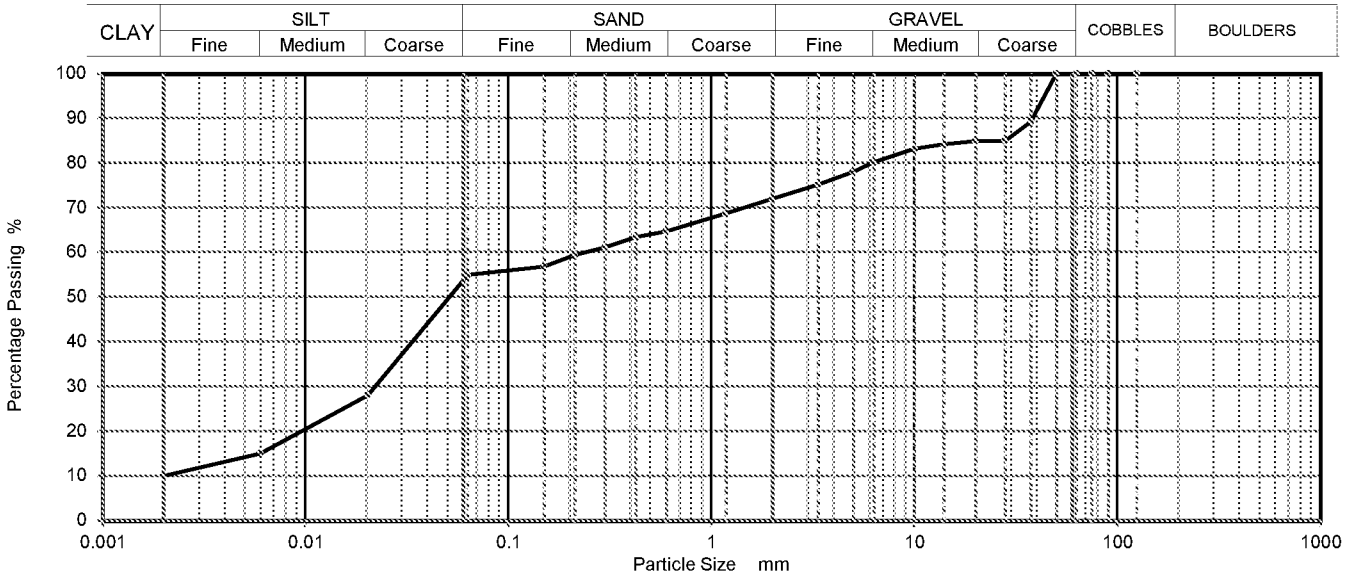
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Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

BS1377:Part 2:1990, clauses 9.2 and 9.4

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS02A
Sample Description:	Brown mottled light grey slightly gravelly slightly sandy clayey SILT. Gravel is of flint and chalk.	Sample Depth (m)	1.60
		Sample Reference	B1



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	28
90	100	0.0060	15
75	100	0.0020	10
63	100		
50	100		
37.5	89		
28	85		
20	85		
14	84		
10	83		
6.3	80		
5	78		
3.35	75		
2	72		
1.18	69		
0.6	65	Particle density	(assumed)
0.425	63	2.65	Mg/m3
0.3	61		
0.212	59		
0.15	57		
0.063	55		

Sample Proportions	% dry mass
Very coarse	0
Gravel	28
Sand	17
Silt	45
Clay	10

Grading Analysis		
D100	mm	
D60	mm	0.243
D30	mm	0.022
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

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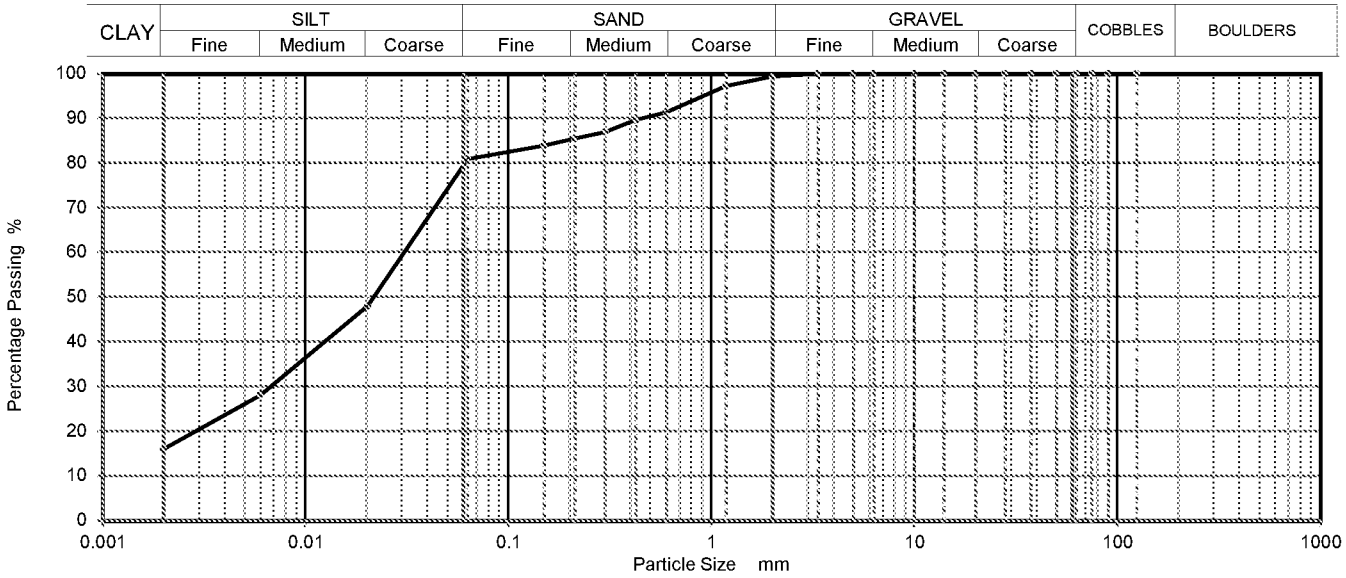
4031

Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

BS1377:Part 2:1990, clauses 9.2 and 9.4

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS03
Sample Description:	Brown and orange brown mottled light grey slightly gravelly slightly sandy clayey SILT. Gravel is of claystone.	Sample Depth (m)	1.40
		Sample Reference	B1



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	48
90	100	0.0060	28
75	100	0.0020	16
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	97		
0.6	91	Particle density	(assumed)
0.425	90	2.65	Mg/m3
0.3	87		
0.212	85		
0.15	84		
0.063	81		

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	18
Silt	65
Clay	16

Grading Analysis		
D100	mm	
D60	mm	0.031
D30	mm	0.007
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Notes:

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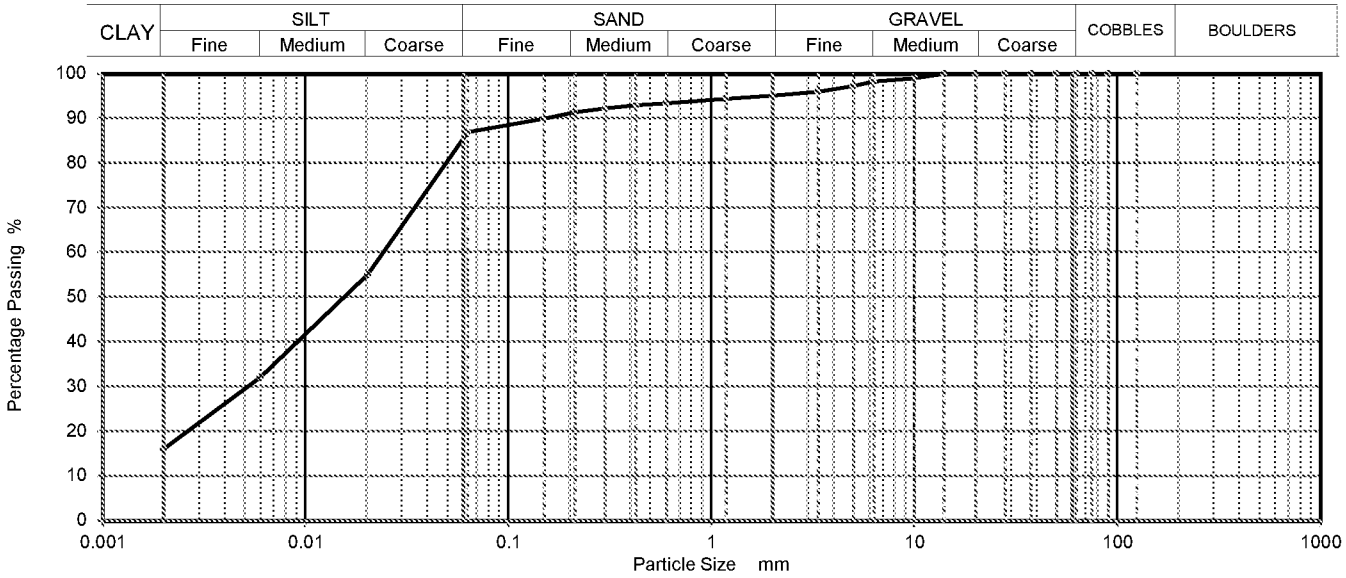
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Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	18/06/2021	1 of 1

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

BS1377:Part 2:1990, clauses 9.2 and 9.4

Project Name:	**Lamb's Field**	Project Number:	**GL24212-01**
Client Name:	**Landlink Estates Limited**	Sample Location:	WS04
Sample Description:	Grey brown and brown mottled light grey slightly gravelly slightly sandy clayey SILT. Gravel is of chalk and claystone.	Sample Depth (m)	1.20
		Sample Reference	B1



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	55
90	100	0.0060	32
75	100	0.0020	16
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	93	Particle density	(assumed)
0.425	93	2.65	Mg/m3
0.3	92		
0.212	91		
0.15	90		
0.063	87		

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	8
Silt	71
Clay	16

Grading Analysis		
D100	mm	
D60	mm	0.024
D30	mm	0.005
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Notes:

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Remarks	Approved	Date	Sheet No.:
	MW M. Willson Laboratory Manager	21/06/2021	1 of 1

SUMMARY OF RESTRICTED TESTS

Project Name:	**Lamb's Field**	Project Number:
Client Name:	**Landlink Estates Limited**	**GL24212-01**

Location	Depth m	Sample Ref	Test Scheduled	Reason why sample could not be tested
WS02A	5.00	D8	Saturation Moisture Content and Intact Dry Density of Chalk	No suitable sized intact chalk lump present. Changed to Atterberg Limit
WS03	4.80	D9	Saturation Moisture Content and Intact Dry Density of Chalk	No suitable sized intact chalk lump present. Changed to Atterberg Limit

Remarks	Approved	Date	Sheet No.:
	MW	21/06/2021	1 of 1

ARUN DISTRICT COUNCIL 19/12/2021

Matthew Wilson
Harrison Group
Harrison Testing Services
Unit 1
Alston Road
Norwich
Norfolk
NR6 5DS

[redacted]

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

[redacted]

Analytical Report Number : 21-78136

Project / Site name:	Lambs Field	**Samples received on:**	01/06/2021
Your job number:	GL24212	**Samples instructed on/ Analysis started on:**	01/06/2021
Your order number:	PO 37175 GB	**Analysis completed by:**	04/06/2021
Report Issue Number:	1	**Report issued on:**	04/06/2021
Samples Analysed:	2 soil samples		

Signed: [redacted]

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 21-78136
Project / Site name: Lambs Field
Your Order No: PO 37175 GB

Lab Sample Number				1887879	1887880
Sample Reference				WS02A	WS04
Sample Number				D2	D2
Depth (m)				0.60	0.60
Date Sampled				27/05/2021	27/05/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	13
Total mass of sample received	kg	0.001	NONE	1.5	1.5
General Inorganics					
pH - Automated	pH Units	N/A	MCERTS	8.3	8.6
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0060	0.0055

U/S = Unsuitable Sample I/S = Insufficient Sample

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The results included within the report relate only to the sample(s) submitted for testing.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number : 21-78136
Project / Site name: Lambs Field

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1887879	WS02A	D2	0.6	Brown clay and sand.
1887880	WS04	D2	0.6	Brown clay and sand with gravel and vegetation.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number : 21-78136
Project / Site name: Lambs Field

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

ARUN DISTRICT COUNCIL Y/3/22/OUT

APPENDIX E

ENVIROMENTAL LABORATORY TESTING

[redacted]

GL
Harrison Group
Water Ways Business Centre
Navigation Drive
South Ordnance Way
Enfield
EN3 6JJ

[redacted]

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

[redacted]

Analytical Report Number : 21-76143

Project / Site name:	Lamb s Field	**Samples received on:**	20/05/2021
Your job number:	GL24212	**Samples instructed on/ Analysis started on:**	20/05/2021
Your order number:	GL24212	**Analysis completed by:**	27/05/2021
Report Issue Number:	1	**Report issued on:**	27/05/2021
Samples Analysed:	4 soil samples		

Signed: [redacted]

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

ARUN DISTRICT COUNCIL Y/3/22/OUT
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Analytical Report Number: 21-76143
Project / Site name: Lamb s Field
Your Order No: GL24212

Lab Sample Number				1877166	1877167	1877168	1877169
Sample Reference				WS01	WS02A	WS03	WS04
Sample Number				1	1	1	1
Depth (m)				0.20-0.20	0.20-0.20	0.20-0.20	0.20-0.20
Date Sampled				19/05/2021	18/05/2021	18/05/2021	18/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	12	15	12
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.2	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7.5	6.4	5.9	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	600	400	440	440
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.5	1.5	-	-
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.5	9.5	8.2	8.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.83	0.58	0.58	0.64
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	0.9	0.8	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	20	21	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	16	19	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	17	15	21	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	15	13	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	28	29	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	47	54	49

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number: 21-76143
Project / Site name: Lamb s Field
Your Order No: GL24212

Lab Sample Number				1877166	1877167	1877168	1877169
Sample Reference				WS01	WS02A	WS03	WS04
Sample Number				1	1	1	1
Depth (m)				0.20-0.20	0.20-0.20	0.20-0.20	0.20-0.20
Date Sampled				19/05/2021	18/05/2021	18/05/2021	18/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Petroleum Hydrocarbons							
TPH Texas (C6 - C8)	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
TPH Texas (C8 - C10)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Texas (C10 - C12)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH Texas (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH Texas (C16 - C21)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Texas (C21 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH Texas (C6 - C40)	mg/kg	10	NONE	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number : 21-76143
Project / Site name: Lamb s Field

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1877166	WS01	1	0.20-0.20	Light brown loam and gravel with vegetation.
1877167	WS02A	1	0.20-0.20	Light brown loam and gravel with vegetation.
1877168	WS03	1	0.20-0.20	Light brown loam and gravel with vegetation.
1877169	WS04	1	0.20-0.20	Light brown loam and gravel with vegetation.

ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number : 21-76143
Project / Site name: Lamb s Field

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Texas (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method	L064-PL	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

ARUN DISTRICT COUNCIL Y/3/22/OUT

4041

GL
Harrison Group
Water Ways Business Centre
Navigation Drive
South Ordnance Way
Enfield
EN3 6JJ

[redacted]

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

[redacted]

Analytical Report Number : 21-81693

Project / Site name:	Lambs Fields	**Samples received on:**	17/06/2021
Your job number:	GL24212	**Samples instructed on/ Analysis started on:**	17/06/2021
Your order number:		**Analysis completed by:**	24/06/2021
Report Issue Number:	1	**Report issued on:**	24/06/2021
Samples Analysed:	4 water samples		

Signed: [redacted]

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

ARUN DISTRICT COUNCIL Y/3/22/OUT
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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 21-81693
Project / Site name: Lambs Fields

Lab Sample Number				1906213	1906214	1906215	1906216
Sample Reference				WS01	WS02A	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.30	2.38-2.38	2.41-2.41	1.84-1.84
Date Sampled				16/06/2021	16/06/2021	16/06/2021	16/06/2021
Time Taken				1130	1100	1030	1100
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.3	7.2	7.4	7.3
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	-	< 1.0	-
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	-	< 200	-
Sulphate as SO4	mg/l	0.045	ISO 17025	26.6	41.1	49.5	63.2
Total Sulphur	µg/l	15	NONE	8900	14000	16000	21000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Phenols by HPLC							
Catechol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Resorcinol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Cresols	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Naphthols	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Isopropylphenol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Phenol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Trimethylphenol	µg/l	0.5	NONE	< 0.5	-	< 0.5	-
Total Phenols							
Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	-	< 3.5	-
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	< 0.01	-
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	-	< 0.16	-

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number: 21-81693
Project / Site name: Lambs Fields

Lab Sample Number				1906213	1906214	1906215	1906216
Sample Reference				WS01	WS02A	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30-1.30	2.38-2.38	2.41-2.41	1.84-1.84
Date Sampled				16/06/2021	16/06/2021	16/06/2021	16/06/2021
Time Taken				1130	1100	1030	1100
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	33	-	27	-
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	-	< 5.0	-
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.26	-	0.42	-
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	-	0.02	-
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.5	-	3.1	-
Copper (dissolved)	µg/l	0.5	ISO 17025	1.8	-	2.8	-
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	-	0.3	-
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	-	< 0.05	-
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.1	-	4.2	-
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	-	0.8	-
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.8	-	9.5	-
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	-	< 10	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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ARUN DISTRICT COUNCIL Y/3/22/OUT

Analytical Report Number : 21-81693
Project / Site name: Lambs Fields

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Thiocyanate in water	Determination of thiocyanate in water by discreet analyser (colorimetry). Accredited matrices SW, GW, PW.	In house method based on SMWW 4500-CN-M. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"'	L039-PL	W	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

ARUN DISTRICT COUNCIL Y/3/22/OUT

APPENDIX F

RIG CERTIFICATES

[redacted]

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwood Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref:	DART312
Test Date:	06/08/2020
Report Date:	06/08/2020
File Name:	DART312.spt
Test Operator:	NPB

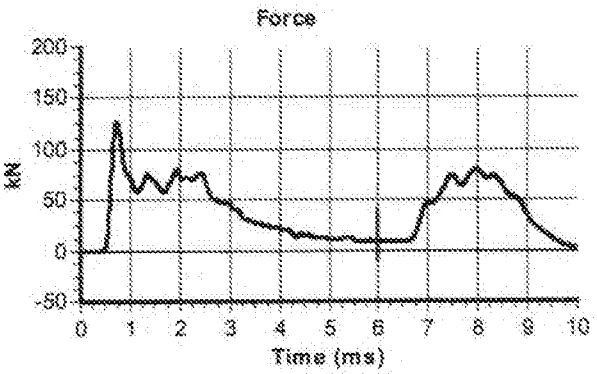
Instrumented Rod Data

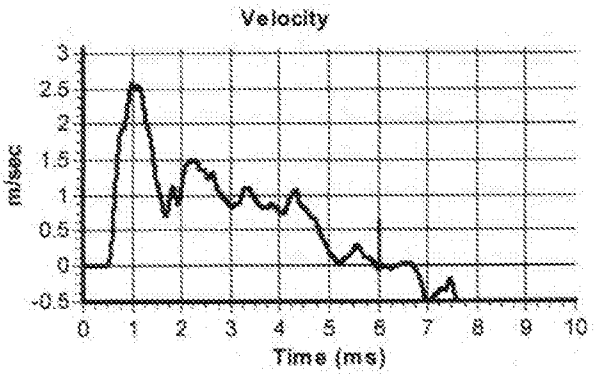
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.3
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	6458
Accelerometer No.2:	9607

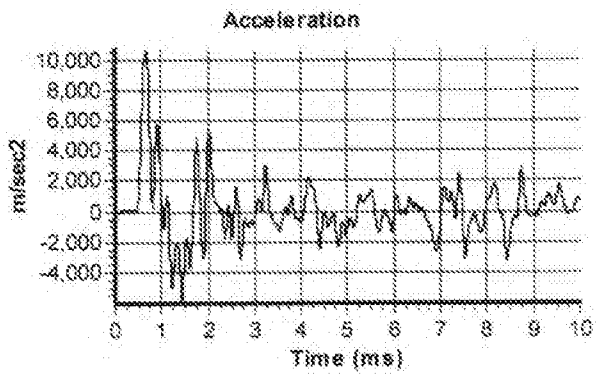
SPT Hammer Information

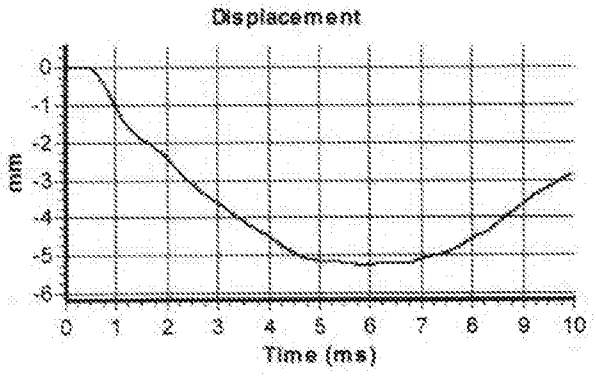
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.5

Comments / Location
CHARLWOODS









Calculations

Area of Rod A (mm2):	944
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	303

Energy Ratio E_r (%): 64

Signed: Lisa Baker

Title: Assistant Field Operations Manager

The recommended calibration interval is 12 months

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