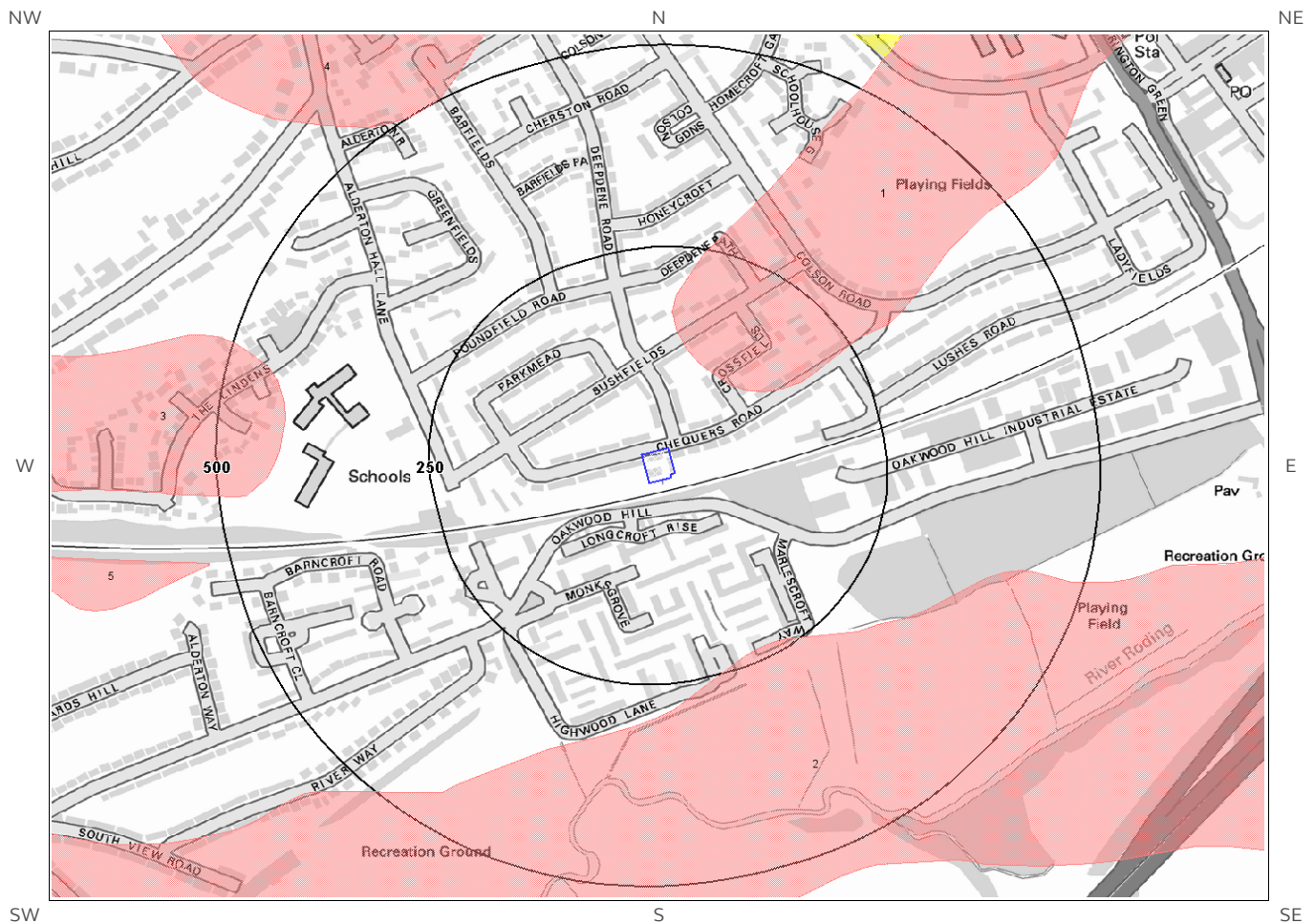


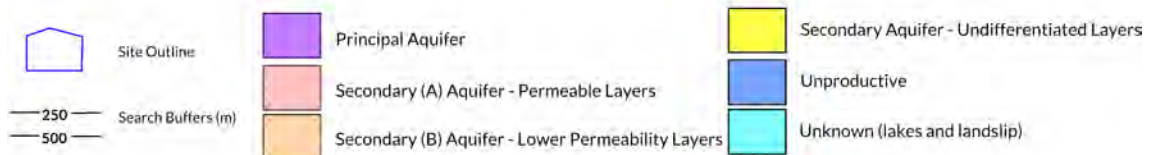
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6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



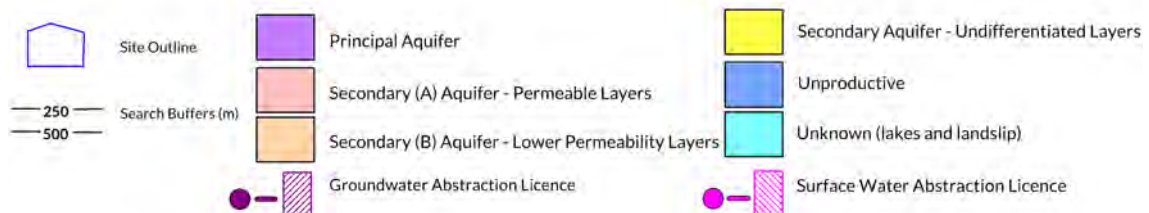
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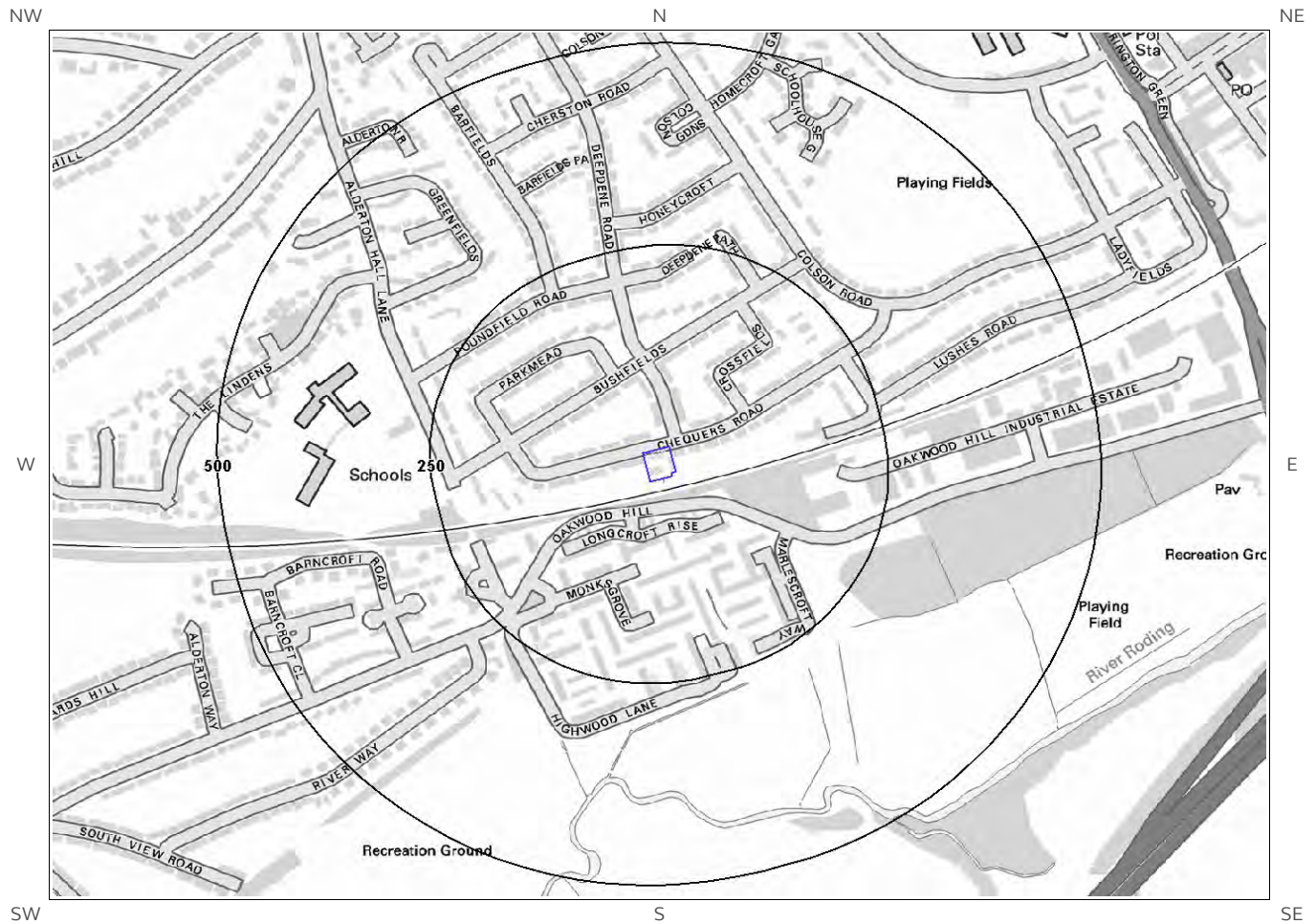
6b. Aquifer Within Bedrock Geology and Abstraction Licences



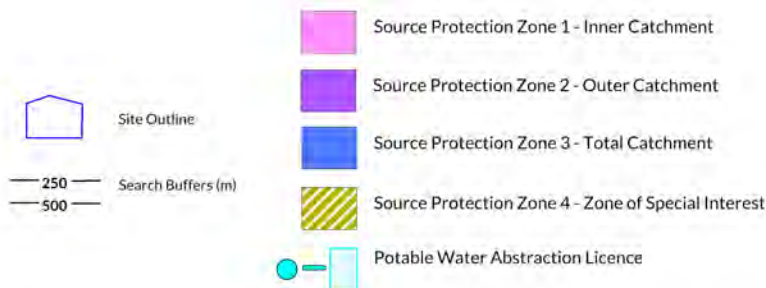
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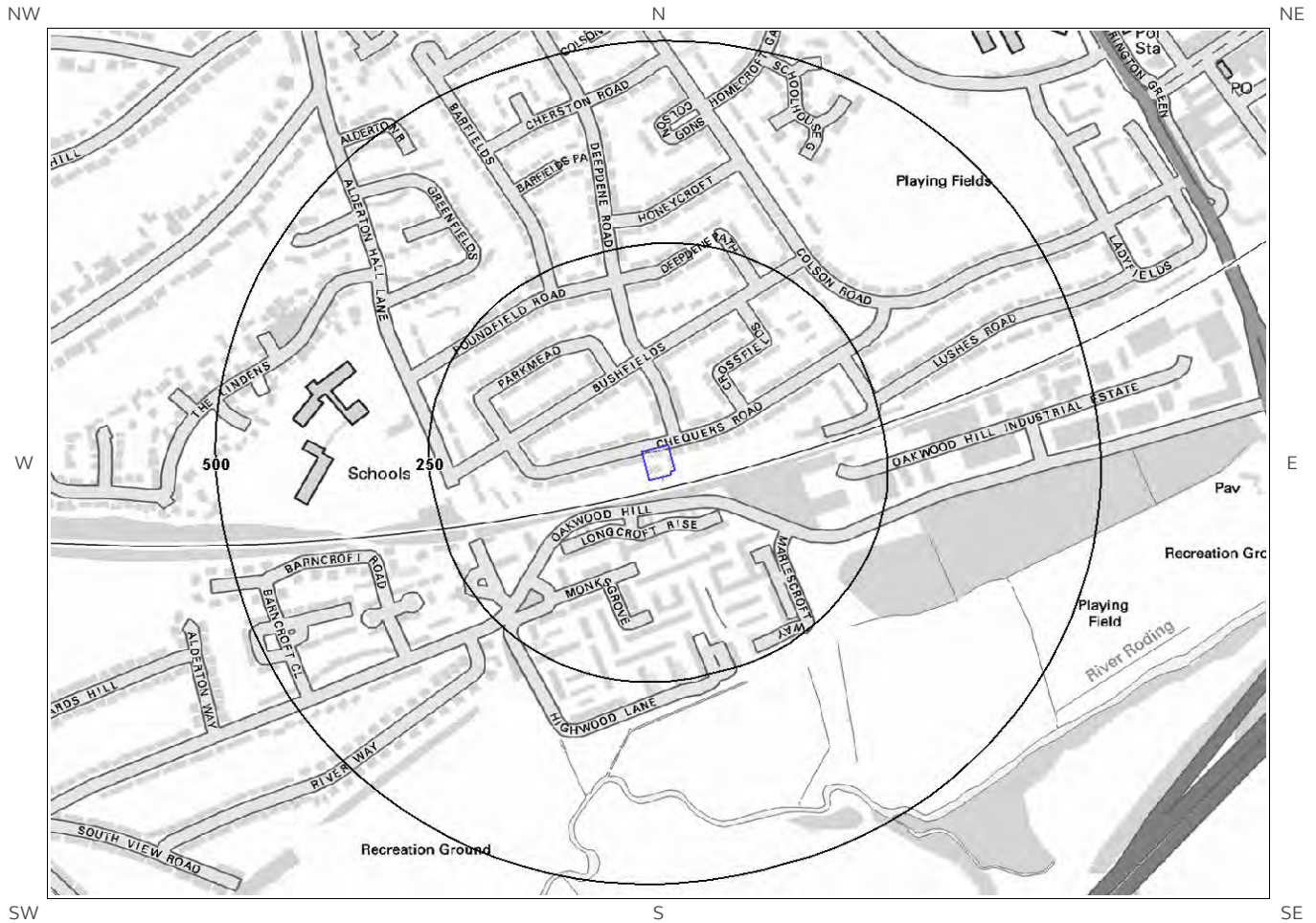
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



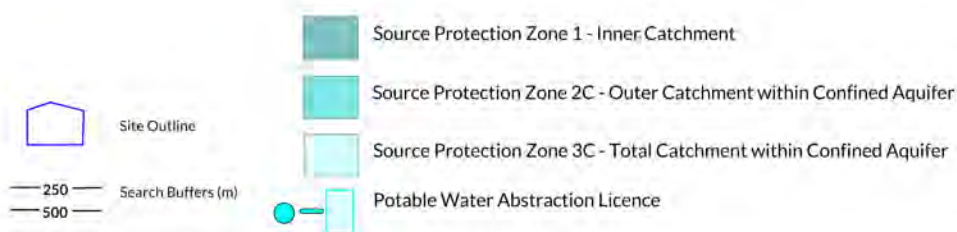
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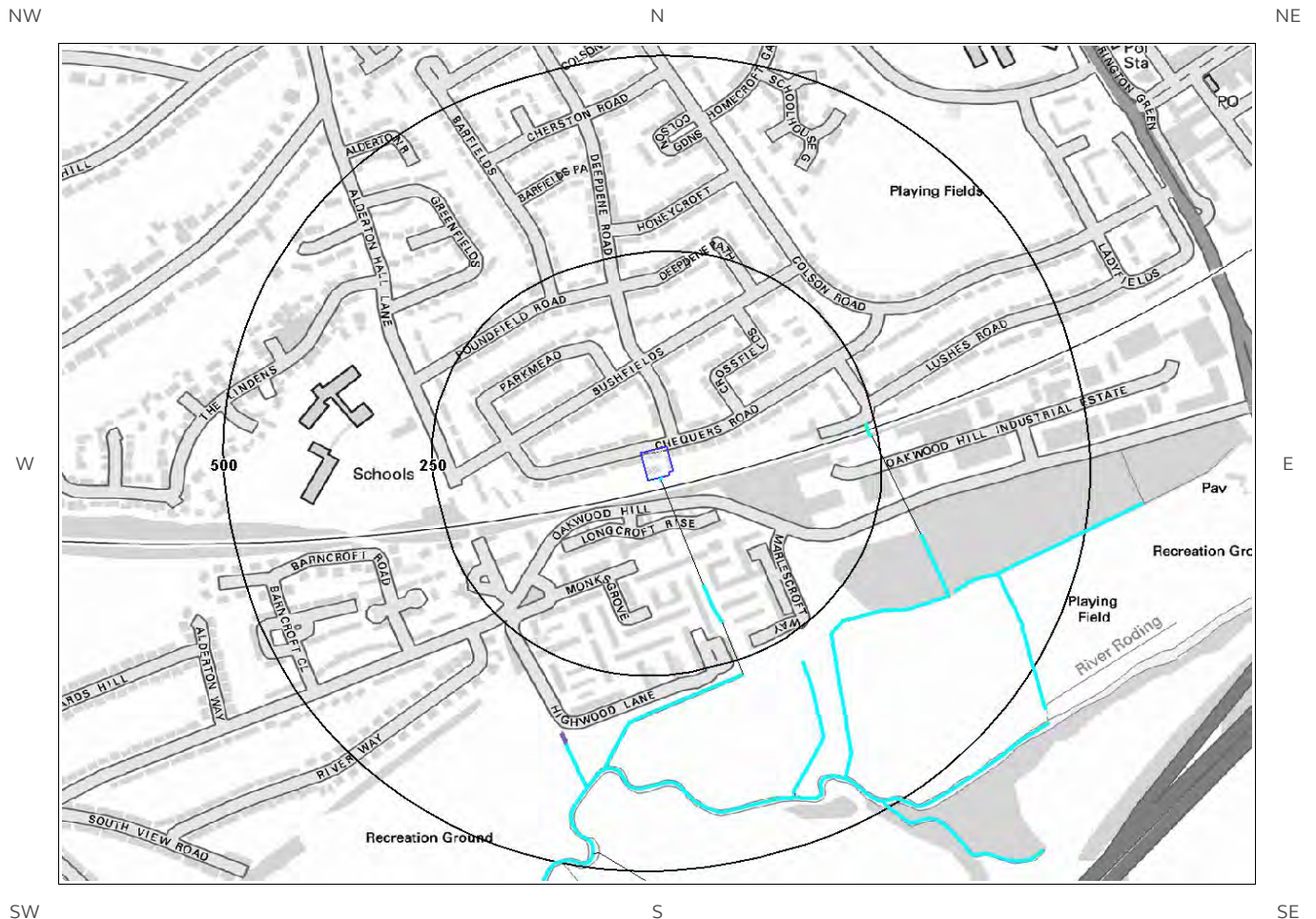
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	106	NE	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
2	235	SE	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
3	421	W	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
4	498	NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1322	E	544850 195700	Status: Historical Licence No: 08/37/53/0053 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: EPPING FOREST GOLF & COUNTRY CLUB - BOREHOLE Data Type: Point Name: UK LEISURE HOLDINGS LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 16/12/1996 Expiry Date: 31/12/2004 Issue No: 100 Version Start Date: 16/12/1996 Version End Date:
Not shown	1322	E	544850 195700	Status: Historical Licence No: 08/37/53/0057 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: WOOLSTON MANOR-BOREHOLE Data Type: Point Name: HUNTS WICKS LEISURE LIMITED Annual Volume (m³): 55000 Max Daily Volume (m³): 540 Original Application No: - Original Start Date: 11/05/2005 Expiry Date: 31/03/2016 Issue No: 2 Version Start Date: 12/08/2005 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1935	E	545316 196561	Status: Active Licence No: TH/037/0053/002 Details: Spray Irrigation - Storage Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER RODING AT ABRIDGE Data Type: Point Name: Norwood Farming Annual Volume (m³): 133500 Max Daily Volume (m³): 5340 Application No: - Original Start Date: 11/09/2014 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 11/09/2014 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site

Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
83	NE	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
292	SE	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
420	W	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site

None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	0 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	0 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	4 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	4 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	145 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.1
4	145 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.1

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
4	199 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	199 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	239 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	239 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	239 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	239 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	240 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	240 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	243 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	243 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	269 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
10	269 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
10	280	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	280 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	286 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	286 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	301 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	301 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	307 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	307 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	339 S	Not Specified	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.3
Not shown	339 S	Not Specified	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.3
15	351 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	351 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	371 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 6.8
17	371 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	371 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
18	371 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	372 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	372 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
19	393 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
Not shown	393 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
20	398 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	398 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
21	410 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	410 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	410 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
Not shown	410 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	411 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	411 E	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	430 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	430 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
25	434 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	434 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
26	442 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	442 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
27	480 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	480 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	482 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	482	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
29	490 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
30	490 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
Not shown	490 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
Not shown	490 SE	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
31	497 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
32	497 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.2
Not shown	497 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	497 S	River Roding	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.2

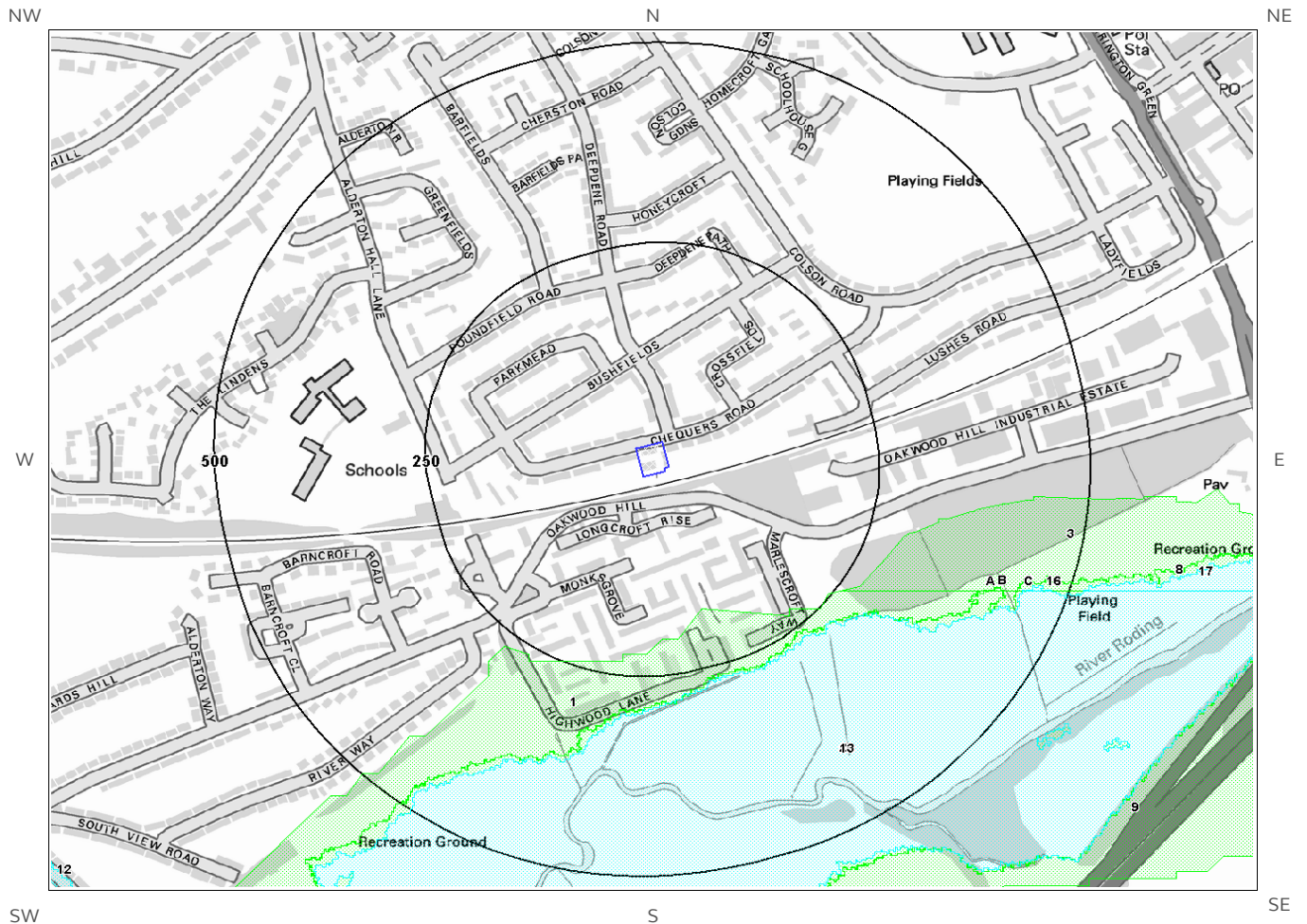
6.11 Surface Water Features

Surface water features within 250m of the study site

None identified

Database searched and no data found.

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



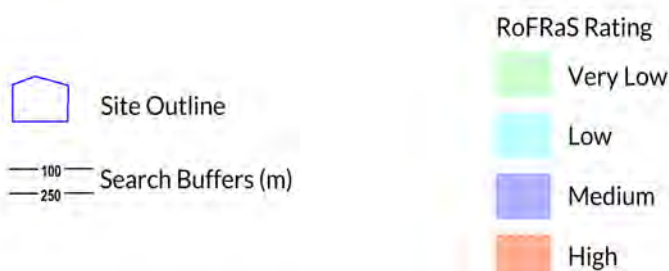
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	177	S	15-Oct-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site

None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

None identified

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

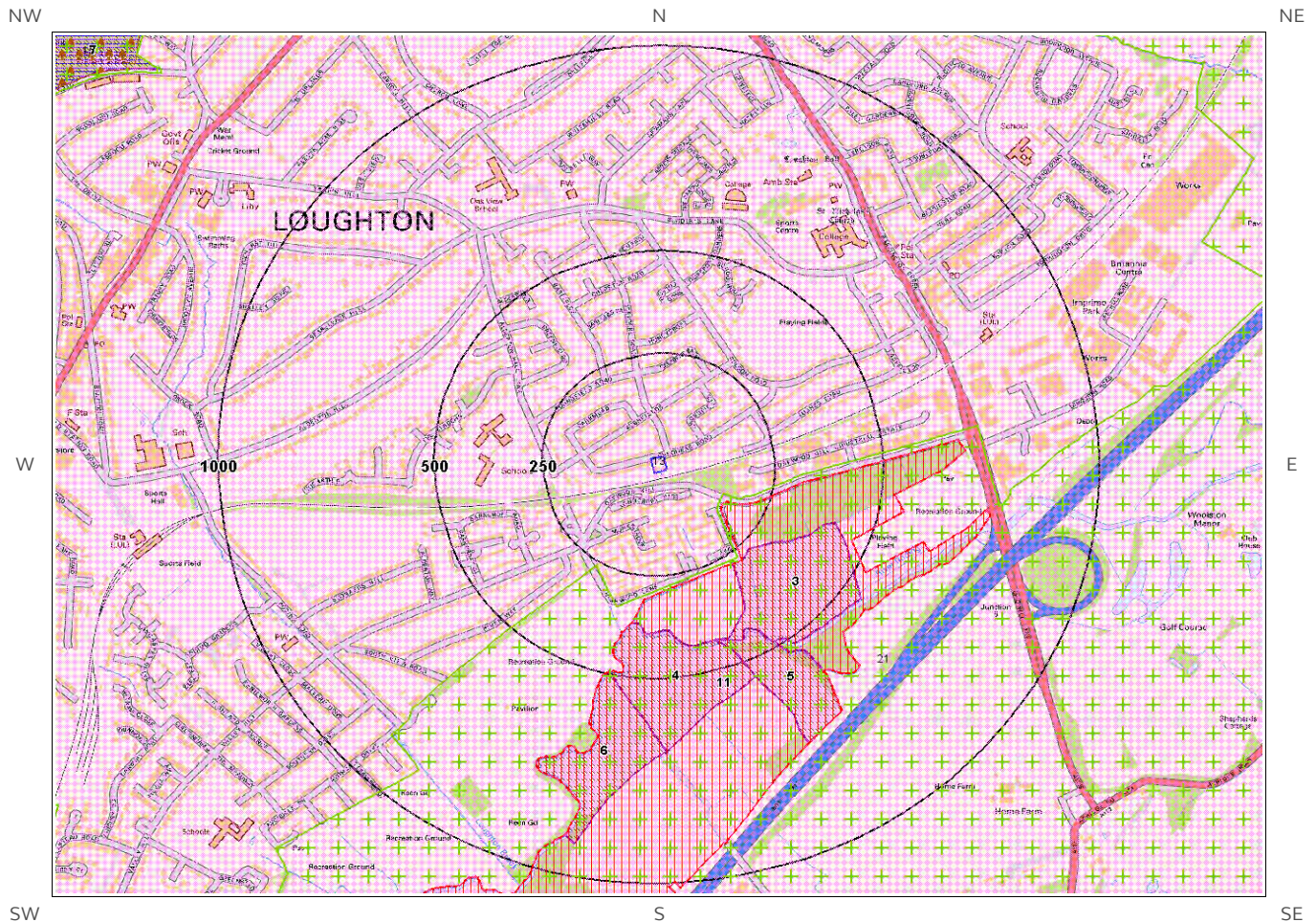
British Geological Survey confidence rating in this result

Not Applicable

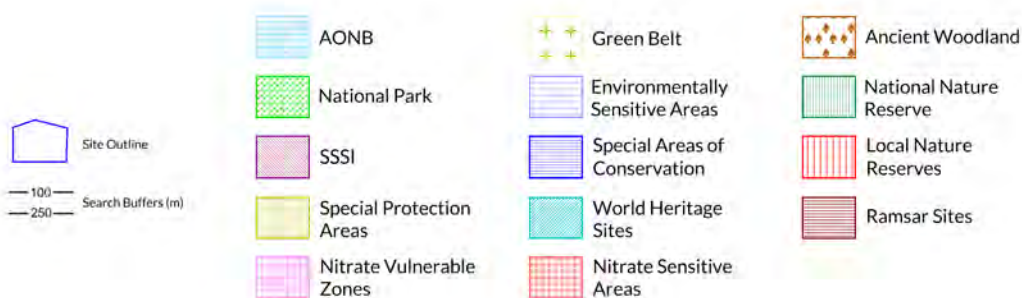
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

8

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
3	270	SE	Roding Valley Meadows	Natural England
4	367	S	Roding Valley Meadows	Natural England
5	429	SE	Roding Valley Meadows	Natural England
6	496	S	Roding Valley Meadows	Natural England
7	1477	NW	Epping Forest	Natural England
Not shown	1735	W	Epping Forest	Natural England
Not shown	1751	NW	Epping Forest	Natural England
Not shown	1964	NW	Epping Forest	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

2

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
1	1477	NW	Epping Forest	Natural England
Not	1735	W	Epping Forest	Natural England

ID	Distance (m)	Direction	SAC Name	Data Source
shown				

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

6

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
15	1535	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1737	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1792	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1826	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1969	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1983	NW	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

2

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
11	155	SE	Roding Valley Meadows	Natural England

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1928	N	Home Mead	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
13	0	On Site	Existing	DEFRA
Not shown	1737	W	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

1

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
21	143	SE	London Area Greenbelt	Epping Forest District

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Epping Forest District Council
Phone: 01992 564000

Web: <http://www.eppingforestdc.gov.uk/>

Address: Civic Offices, High Street, Epping, Essex, CM16 4BZ

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

<https://www.groundsure.com/terms-and-conditions-may25-2018>

APPENDIX E

ASBESTOS CEMENT REMOVAL RAMS AND CONSIGNMENT NOTES

The Hazardous Waste Regulations 2005: Consignment Note

Tel: 01708 866060
Email: info@asbestoswastesolutions.co.uk
Web: www.asbestoswastesolutions.co.uk



PART A: Notification details

1 Consignment note code: **W O O D S B / B 8 0 0 3**

2 The waste described below is to be removed from

CHEQUERS ROAD GARAGES
LOUGHTON
ESSEX
IG10 3QF

3 The waste will be taken to

PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB

4 The waste producer was

AA WOODS LIMITED
WOODS HOUSE RIVER WAY
HARLOW ESSEX CM20 2DP

PART B: Description of the waste

1 The process giving rise to the waste(s) was: **ASBESTOS REMOVAL** 2 SIC (2007) for the process giving rise to the waste: **39.001**

3 WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code)(6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:	Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
CEMENT ROOF SHEETS	1 7 0 6 0 5		CHRYSTOTILE	SOLID	HP5 / HP7	35YD

The information given below is to be completed for each EWC identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN class(es)	Packing group(s)	Special handling requirements
1 7 0 6 0 5	2590	CHRYSTOTILE ASBESTOS	9	III	Double Bagged / Wrapped

PART C: Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached, tick here ☐)

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements.

Where this note comprises part of a multiple collection the round number and collection number are:

1 Carrier name:

PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB

2 Carrier registration no.

CBDU133922

3 Vehicle registration no.:

QN 65 NMI

Signature

Date **07/07/2017** Time **12:00**

PART D: Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempted and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1 Consignor name:

AA WOODS LIMITED
WOODS HOUSE RIVER WAY
HARLOW ESSEX CM20 2DP

On behalf of

Signature

Date **07/07/2017** Time **12:00**

PART E: Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)
1 7 0 6 0 5	1440	A	D15

1 I received this waste at the address given in A4 on:

Date **07/07/2017** Time **13:51**

Skip No:

2 Vehicle registration no.:

Name:

PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB

3 Where waste is rejected please provide details:

On behalf of:

I certify that waste permit number:

BV 1674 IL

authorises the management of the waste described in B at the address given in A4.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are:

Signature

Date **07/07/2017** Time **13:51**



Pinden Quarry
WASTE TRANSFER NOTE
Green Street Green Road
Longfield, Dartford, Kent
DA2 8EB
Tel: 01474 707149
Fax: 01474 708293

Type: Collection	Order No: 206282	Ticket No: 554080	
Cash Sale: No	Date: 07/07/2017	Product: (ROLL3L) 1 X 30CYD ROLL ON/OFF LIDDED	Customer Order No: B8002
Time On Site: 07/07/2017 11:45:00	Time Start:	Time Stop:	Time Complete: 07/07/2017 12:00:00
Waiting Time: No	Waiting Time Charge: 0.00	Waste Type Code/Confirmed:	ASBW1/CEMENT BONDED ASBESTOS-MIN 2 TONNE
Parking Ticket: No	Parking Ticket Value: 0.000	Cancelled: No	Cancelled Reason:
Parking Ticket: No	Parking Ticket Value: 0.000	Cancelled: No	Cancelled Reason:
Skip Col No: 35103	Skip Del No:		
Tally 1:	Tally 2:		
Gross Weight: 19260.00	Tare Weight: 17820.00	Nett Weight: 1440.00	
SIC Code: 39000	EWC Code: 170605	Disposal Site: (PWI) Pinden Waste In	

'I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England and Wales) Regulations 2011'

Account Address:

ASB007
27A OLIVER CLOSE
WEST THURROCK
ESSEX

RM20 3EE

Delivery Address:

67483
ASBESTOS WASTE SOLUTIONS
CHEQUERS ROAD GARAGES

Vehicle: GN15 NMU

Driver: CHRIS CLAY

Customer: justin warren

Driver: CHRIS CLAY

Photo 1:

Photo 2:

**AA WOODS
PLAN OF WORK
NON-NOTIFIABLE
RISK ASSESSMENT & METHOD STATEMENT**

GARAGE ROOF REMOVAL



Job Number:	H02173
Date Method Issued:	03/07/2017
Revision:	1

CLIENT:	LOW LINE BUILDERS
Site Address:	CHEQUERS ROAD - GARAGES LOUGHTON ESSEX IG10 3QF

TABLE OF CONTENTS

1.0	CONTRACTUAL INFORMATION	3
1.1	CLIENT CONTACT DETAILS	3
1.2	OTHER ORGANISATIONS	3
1.3	SITE ATTENDANCE DETAILS	3
2.0	MANAGEMENT OF THE JOB.....	4
2.1	COMPANY PROJECT TEAM (CONTACT DETAILS)	4
2.2	AMENDMENTS	4
3.0	SCOPE	5
3.1	SCOPE.....	5
3.2	SITE ACCESS	6
3.3	PROJECT AND RISK ASSESSMENT REVIEW	7
4.0	EQUIPMENT	8
4.1	ACCESS EQUIPMENT	8
4.2	OTHER EQUIPMENT	8
5.0	PPE / RPE.....	9
5.1	RESPIRATORY PROTECTIVE EQUIPMENT	9
5.2	PERSONAL PROTECTIVE EQUIPMENT	9
6.0	WORK AREA DETAILS	9
6.1	AREA CONSTRUCTION	9
7.0	METHOD	10
7.1	Garage Roof Removal Method.....	10
7.2	Cement Debris Removal Method	13
8.0	EMERGENCY EVACUATION	14
9.0	OTHER SITE SPECIFIC INFORMATION.....	15
9.1	WELFARE FACILITIES.....	15
9.2	WASTE	15
9.3	ISOLATIONS.....	15
10.0	AMENDMENTS.....	16
11.0	RISK ASSESSMENT	16
11.1	SURVEY COMPANY	16
11.2	ASBESTOS RISK ASSESSMENT	16
12.0	ACCEPTANCE OF METHOD STATEMENT	20

1.0 CONTRACTUAL INFORMATION

1.1 CLIENT CONTACT DETAILS

NAME	Epping Forest District Council
TELEPHONE	01992 564 000
CLIENT ADDRESS (IF DIFFERENT FROM SITE ADDRESS)	Epping Forest District Council Civic Offices 323 High Street Epping Essex CM16 4BZ

1.2 OTHER ORGANISATIONS

PRINCIPAL CONTRACTOR	Not Applicable
CDM COORDINATOR	Not Applicable
ANALYTICAL LABORATORY	Not Applicable
CONTRACTED TO:	Not Applicable
TIME ANALYST DUE ONSITE:	Not Applicable
ANALYTICAL SERVICES TO BE PROVIDED:	Not Applicable

1.3 SITE ATTENDANCE DETAILS

PROJECT START (SET UP):	Monday 3 rd July 2017
REMOVAL COMMENCES:	Monday 3 rd July 2017
PROJECT END	Wednesday 5 th July 2017
HOURS OF WORK (MON-FRI)	8.00 – 16.30
HOURS OF WORK (SAT-SUN)	Not Applicable

2.0 MANAGEMENT OF THE JOB

2.1 COMPANY PROJECT TEAM (CONTACT DETAILS)

	Operative in Charge	Supervisor	Contracts Manager / Director
Name		Lee Ellis	Dave Pienaar
Telephone Contact		07449 838 830	07957 569059
Site Attendance		On site at all times	Available via mobile phone

MAXIMUM EMPLOYEES ON SITE:	NAMES:
4	SEE SITE REGISTER

THE SUPERVISOR OR THE OPERATIVE IN CHARGE WILL LEAD ALL WORK ACTIVITIES.

The supervisor or the operative in charge will record checks, defects and actions taken according to the standard procedures.

2.2 AMENDMENTS

Nominated Persons:

Minor Change

Operative in charge following discussions with the Supervisor
or
Supervisor

Major Change

Supervisor, following discussions with the Contracts Manager / Director
or
Contracts Manager / Director

NOTE – Section 9 must be completed by the nominated person prior to the change being implemented

3.0 SCOPE

3.1 SCOPE

Remove and dispose 28 x single storey garages



To remove asbestos cement debris to 2 of the above garages from fire damage under controlled conditions and carry out a litter pick outside the garage block.

PLAN OF WORK THE CHEQUERS

FIRE DAMAGED GARAGES

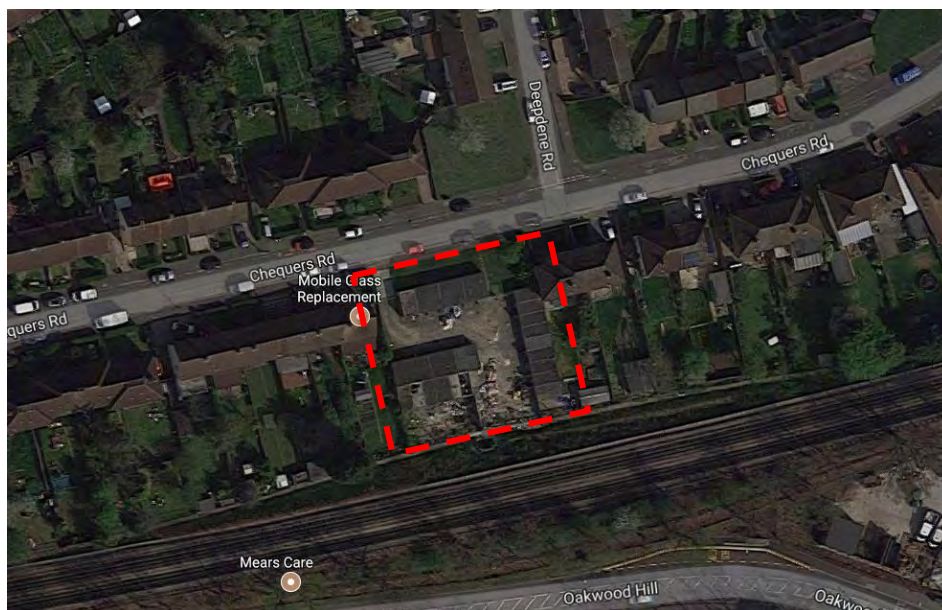


AREA TO LITTER PICK



3.2 SITE ACCESS

Via driveway



3.3 PROJECT AND RISK ASSESSMENT REVIEW

The first act of the Supervisor or the Operative in Charge (if on site prior to contract commencement) must be to review the method statement and risk assessments and establish if the method statement is adequate for the task at hand.

If there are issues with the method or risk assessments (e.g. hazards are present that are not covered) it shall be amended (see section 2.2).

In particular, if any of the garages are locked or in any way not accessible through the main door, these should be listed as no access in the site diary and not attempted. Contact the office to report the no access

4.0 EQUIPMENT

4.1 ACCESS EQUIPMENT

Scaffold Tower	NOT REQUIRED	Hop-Ups	NOT REQUIRED
Podium Steps	REQUIRED	Ladder	NOT REQUIRED
Scaffold	NOT REQUIRED	Other	
6' Stepladders	NOT REQUIRED	Other	

4.2 OTHER EQUIPMENT

- Prise-bar
- Road cones x 3
- H-Type Vac (HZ750) x 2
- Airless sprayer x 1
- 3KVA Generator
- 3KVA Transformer
- 110v Leads x 2
- 1000G Polythene x 1
- Tape x 6 rolls
- Wetstrip x 5ltrs
- Gloves x 2 pairs
- Overalls (white) x 4 pairs
- Bucket and sponge x 1
- Dustpan and brush x 1
- Signs x4
- Barrier tape x 1
- Waste sack (red) x 100
- Waste sack (clear) x 100
- Bolt cropper

5.0 PPE / RPE

5.1 RESPIRATORY PROTECTIVE EQUIPMENT

Inside Work Area	Orinasal ½ mask respirator with p3 filter to EN149
Waste Runs	Orinasal ½ mask respirator with p3 filter to EN149
Work Area Construction	N/A
Clearing Site	N/A

5.2 PERSONAL PROTECTIVE EQUIPMENT

Safety foot-wear	Required at all times on all sites
Hard Hats	REQUIRED
Safety Gloves	REQUIRED
Eye Protection	REQUIRED
High-Vis Clothing	REQUIRED
Other	NOT REQUIRED
Other	NOT REQUIRED
Other	NOT REQUIRED

6.0 WORK AREA DETAILS

6.1 AREA CONSTRUCTION

Pre-cleaning will be required in all cases

The working area will be segregated off by use of red and white barrier tape and must clearly display the appropriate warning signs:



Will the works block a fire escape?

(If yes the Supervisor and/or Contract Manager/Director must be contacted and work is **NOT** to commence until this situation is corrected)

7.0 METHOD

7.1 Garage Roof Removal Method

The Supervisor or the Operative in Charge (if on site prior to contract commencement) is to read the method of work schedule and risk assessments to all operatives and is to ensure that all operatives sign the site induction record following their verbal confirmation that they fully understand the methods of works and safe systems to be adopted during the project.

Operatives shall don PPE, this shall include **(in all cases)**:

- Safety boots
- Disposable white overalls
- **High vis vests** (outside of barrier tape only)
- **Hard hats.**

Check for evidence of drug use (needles), if present stop work and contact Supervisor/Contracts Manager

Syringes have been identified to the removal area. Operatives are to sweep all loose debris on the floor to the rear and side of the garages and leave piles in situ (operatives are not to bag up or rummage through the debris with their hands). A drop sheet will then be placed over these piles prior to the commencement of the removals.

Should any needles be identified all works will cease, sharp gloves will be utilised and the syringe/needle will be placed with a sharps box prior to works recommencing.

Check for rubble or other significant debris to the roof, if present stop work and contact Supervisor/Contracts Manager

Erect a barrier utilising red and white barrier tape in front of the entrance to the work area to create a segregation area between the work area and any other persons. Affix signage (see page 7)

The operational area is now live, all persons accessing the area shall don the following RPE and PPE:

- Safety boots
- Disposable white overalls
- Hard hats
- Orinasal masks with P3 filter

Remove all loose furniture / equipment from the work area(s).

Sweep area clean using stiff 'yard' style brush

Form polythene catchment sheet, minimum thickness 1000g, on the floor, extending 2 metres from the external elevation(s) of the structure secured with 75mm adhesive tape.

Erect access equipment

NOTE – high vis vests are not required inside the operational area (only in set-up and when outside the operational area)

All panels will be removed exclusively from below. DO NOT GAIN ACCESS ONTO THE ROOF TO FACILITATE REMOVAL

Thoroughly spray all panels with surfactant (diluted 1:15) from below using a GRECO style airless sprayer (not a killer spray). When soaked (the board will change colour), commence removal.

To avoid significant working from height hazard limited breakage will be required.

PLAN OF WORK THE CHEQUERS

In the case of drive nail fixings:

- Puncture the cement panel using a prise bar around the fixing. Complete for all fixings of the first panel
- Manipulate the first cement panel out of position, this may require the use of a pry bar (further breakage is possible)
- Lower panels to the operative on the floor for bagging / wrapping as asbestos waste. All waste should be bagged / wrapped as per the company standard procedures
- All such actions MUST be accompanied by continuous spraying with surfactant using a GRECO style airless sprayer (not a killer spray).

In the case of J-Bolt fixings:

Due to the know known unstable from concrete gutters, the concrete gutter will be removed from the garage prior to the commencement of the roof sheets.

CONCRETE GUTTER FOR REMOVAL



The concrete gutters will be removed from the garages to all the garage block at the same time.

An exclusion zone will be formed 3m out from the front of the garage with the aid of traffic cones and barrier tape.

The j bolts to the front concrete gutter will be cut as per the below method to each garage within the block.

Operatives standing internally in the garage will then carefully knock the concrete gutter forward with the aid of a sledge hammer until it falls to the floor, **operatives are to stand at least a metre back within the garage** during this process.

Once all gutter have been removed to the block the removal of the roof sheets can commence.

- Crop the J-Bolts with bolt cutters. Complete for all fixings of the first panel
- A reciprocating saw may be utilised to cut the j bolts.
- The reciprocating saw has a vibration rating of 2.5m/s² meaning the operatives can have a total trigger time of 5 hours. A work rest regime will be in place when using the tool. Operatives will have 30 minutes on and 15 minutes off with a total trigger time not exceeding 5 hours per man per day. All trigger times are to be recorded on a vibration exposure sheet within the site paperwork by the site supervisor.

PLAN OF WORK THE CHEQUERS

HAND-ARM VIBRATION EXPOSURE CALCULATOR

Version 4.3 January 2014

Tool or process name	Vibration magnitude m/s ² r.m.s.	Exposure points per hour	Time to reach EAV 2.5 m/s ² A (8)		Time to reach ELV 5 m/s ² A (8)		Exposure duration		Partial exposure m/s ² A (8)	Partial exposure points
			hours	minutes	hours	minutes	hours	minutes		
Tool or process 1	2.5	13	8		>24		5		2.0	63
Tool or process 2										
Tool or process 3										
Tool or process 4										
Tool or process 5										
Tool or process 6										

☒ Lock Tool or process names

Instructions for use:
 Enter vibration magnitudes and exposure durations in the white areas
 To calculate, press <Enter>, or move the cursor to a different cell
 The results are displayed in the yellow areas
 To clear all cells, click on the 'Reset' button
 Tick the 'Lock tool or process name' check box to prevent 'Reset' clearing these cells
 For more information, click the 'Help' button

Daily exposure
m/s² A (8)

2.0

Total exposure points

63

Zoom to fit

Help

Reset

Exposure likely to be below
 2.5m/s²A(8) EAV (100 points)

- Manipulate the first cement panel out of position, this may require the use of a pry bar (further breakage is possible)
- Lower panels to the operative on the floor for bagging / wrapping as asbestos waste. All waste should be bagged / wrapped as per the company standard procedures
- All such actions **MUST** be accompanied by continuous spraying with surfactant using a GRECO style airless sprayer (not a killer spray).

Once the first panel has been removed the tops of the cement sheets can be sprayed with surfactant.

Continue with the above method for all remaining panels. Note after the first sheet has been removed, breakage should be much reduced as the panels should be easy to manipulate out of position.

Remove all resultant cement debris caused by the process, including drive nails still in the beams.

Carefully transport waste by safe and controlled means from the working area to sealed skip and place within the designated waste compartment.

Thoroughly fine clean the floor with the aid of a h-type vacuum cleaning equipment and any remaining exposed surfaces, shelves, ledges and joists will also be vacuumed whilst using podium steps.

The supervisor or the operative in charge is to conduct an inspection of the works and working area to confirm satisfactory completion of the specified removal operation.

Strike and wrap / bag all resultant contaminated RPE / PPE and polythene employed during the removal works.

The supervisor or the operative in charge is to conduct a final inspection to ensure the working area(s) have been left clean, safe and ready for reoccupation by others.

NB All, H-Type Vacs used by the company are BS8520 compliant

WASTE ROUTE

The sealed skip will be as close to the property as possible

PLAN OF WORK THE CHEQUERS

7.2 Cement Debris Removal Method

The Supervisor or the Operative in Charge (if on site prior to contract commencement) is to read the method of work schedule and risk assessments to all operatives and is to ensure that all operatives sign the site induction record following their verbal confirmation that they fully understand the methods of works and safe systems to be adopted during the project.

Operatives shall don PPE, this shall include **(in all cases)**:

- Safety boots
- Disposable white overalls
- **High vis vests** (outside of barrier tape only)
- **Hard hats.**

DUE TO THE PRESENCE OF NEEDLES DURING THE CEMENT DEBRIS REMOVAL ALL OPERATIVES ARE TO WEAR SHARPS GLOVES

Erect a barrier utilising red and white barrier tape in front of the entrance to the work area to create a segregation area between the work area and any other persons. Affix signage (see page 7)

The operational area is now live, all persons accessing the area shall don the following RPE and PPE:

- Safety boots
- Disposable white overalls
- Hard hats
- Orinasal masks with P3 filter

Thoroughly spray all rubble with surfactant (diluted 1:15) from below using a GRECO style airless sprayer (not a killer spray). When soaked (the board will change colour), commence removal.

All rubble will then be placed within asbestos waste sacks with the hand held shovels, one operative is to open the bag whilst the other loads it.

Carefully transport waste by safe and controlled means from the working area to sealed skip (UTILISING A WHEEL BARROW).

Thoroughly fine clean the floor with the aid of a h-type vacuum cleaning equipment and any remaining exposed surfaces, shelves, ledges and joists will also be vacuumed whilst using podium steps.

The supervisor or the operative in charge is to conduct an inspection of the works and working area to confirm satisfactory completion of the specified removal operation.

Strike and wrap / bag all resultant contaminated RPE / PPE and polythene employed during the removal works.

The supervisor or the operative in charge is to conduct a final inspection to ensure the working area(s) have been left clean, safe and ready for reoccupation by others.

NB All, H-Type Vacs used by the company are BS8520 compliant

WASTE ROUTE

The sealed skip will be as close to the property as possible

PLAN OF WORK THE CHEQUERS

8.0 EMERGENCY EVACUATION

MUSTER POINT

The muster point must be agreed in advance by the supervisor or the operative in charge and noted below:

MUSTER POINT:

.....

ALARM

If a fire is spotted by any employee on site they shall shout **FIRE, FIRE, FIRE!**

If the fire is **small** and the employee is confident that he/she can put it out they shall do so with the extinguisher situated onsite within the company vehicle.

On hearing the alarm all employees shall proceed directly to the muster point, THEY SHALL NOT PAUSE TO DECONTAMINATE OR COLLECT BELONGINGS

The supervisor or the operative in charge shall conduct a role call and contact the emergency services.

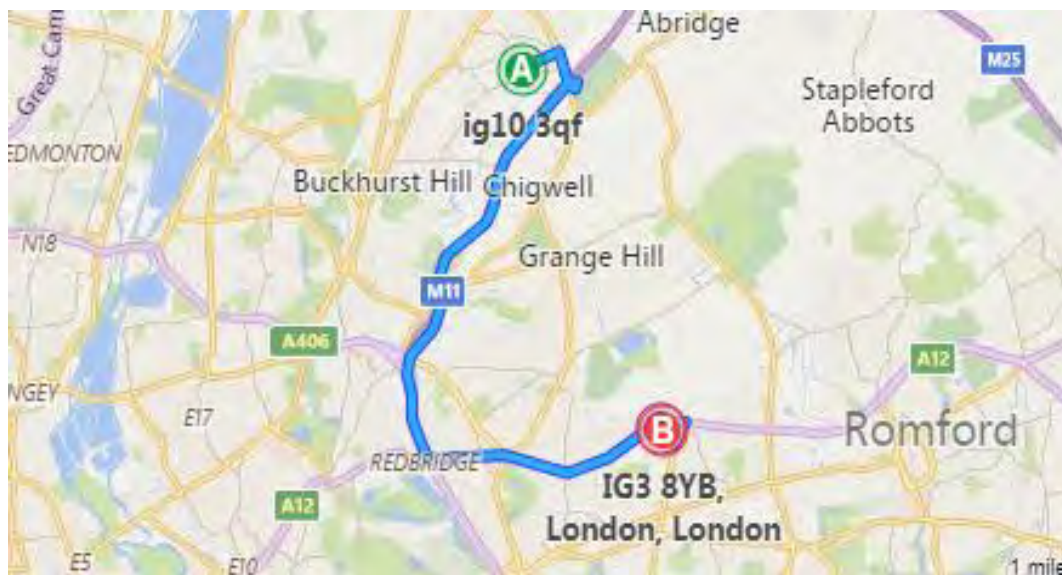
NEAREST A & E HOSPITAL

King George Hospital

Barley Lane
Ilford
Essex
IG3 8YB

Tel: 0330 400 4333

5.4 miles



COMPANY EMERGENCY CONTACT DETAILS.

INSIDE OFFICE HOURS

**OFFICE TELEPHONE
01279 444 630**

OUTSIDE OFFICE HOURS

**CONTRACTS MANAGER RESPONSIBLE
FOR PROJECT (SEE SECTION 2.1)**

9.0 OTHER SITE SPECIFIC INFORMATION

9.1 WELFARE FACILITIES

Your local welfare facilities are:

Portaloo & Van

9.2 WASTE

WASTE DISPOSAL ARRANGEMENTS

Final destination : Pinden Quarry
Longfield
Dartford
DA2 8EB

9.3 ISOLATIONS

No services are known to be present, however the supervisor or the operative in charge must check that this is the case. Listed below are services that could exist. If any are present:

**DO NOT COMMENCE WORK. CONTACT THE SUPERVISOR OR CONTRACTS
MANAGER/DIRECTOR IMMEDIATELY**

SERVICE	Action To Be Taken
Water	ON SITE CHECK
Hot Water	ON SITE CHECK
Natural Gas	ON SITE CHECK
Electricity	ON SITE CHECK
Waste Pipe Services / Traps	ON SITE CHECK
Ventilation	ON SITE CHECK
Smoke Detection Devices	ON SITE CHECK
Sprinkler Systems	ON SITE CHECK

10.0 AMENDMENTS

Minor Change: Operative in charge, following discussions with the Supervisor or Contracts Manager

Major Change: Supervisor, following discussions with the Contracts Manager / Director or Contracts Manager / Director

SEE THE PROCEDURE FOR PROJECT CHANGE

AMENDMENT	DATE	INITIAL
Revision 1 amendments highlighted in yellow	03/07/2017	BC

11.0 RISK ASSESSMENT

11.1 SURVEY COMPANY

COMPANY NAME	Information supplied by client
TYPE OF SURVEY COMPLETED	
DATE SURVEY CONDUCTED	

11.2 ASBESTOS RISK ASSESSMENT

Asbestos Type / Analysis Details	N/A
Quantity Of Asbestos	350m ²
Current Condition Of Asbestos Material(S)	FAIR
Type Of Fixing	J BOLTS / DRIVE NAILS
High Risk Working Methods	None
ANTICIPATED AIRBORNE FIBRE LEVEL (During Activity After Control Measures)	Based on our previous records we expect the airborne fibre level's to be less than 0.24 f/ml we will endeavour to reduce the fibre levels to the lowest possible level

PLAN OF WORK THE CHEQUERS

REF	HAZARD	RISK	AFFECTED	UN-MODIFIED RISK			CONTROLS	RESIDUAL RISK			REMARKS
				S = Severity, P = Probability, T = Total				S = Severity, P = Probability, T = Total			
				S	P	T		S	P	T	
RA08	Working at Height (Podium / Tower)	Falls resulting in cuts, bruises broken bones and possible death	OPS Client 3rd	9	7	63	Inspection prior to use, Competent (trained) operatives to erect. hand rails. Hard hats, Safety Boots, Training	9	2	18	Caution to be observed at all times
RA08A	Stepladder	Falls resulting in cuts, bruises broken bones and possible death	OPS Client 3rd	9	9	81	Inspection prior to use, Competent (trained) operatives to erect. hand rails. Hard hats, Safety Boots, Training	9	4	36	Caution to be observed at all times
RA01	Asbestos removal works.	Inhalation of fibres possibly leading to disease, death	OPS Client 3rd	10	6	60	Only authorised persons to enter the working area. All such personnel must have training, medicals, FFT for the mask in use. Follow the safe systems and methods of work. Fibre suppression	10	2	20	RPE and PPE to be inspected daily by operatives with records kept Caution to be observed at all times
RA02	Slips, trips, falls.	Injury resulting from hazard. Cuts bruises broken bones etc	OPS Client 3rd	7	7	49	Good House keeping to be maintained at all times. Cables and leads to be affixed securely either above head height, taped to floor or at room perimeters. Warning signs of potential hazards. appointed first aider	7	3	21	Regular inspections
RA04	Manual handling (roof sheets)	Injury of operative, back etc long-term disability caused by a one off incident or repetitive strain	OPS Client 3rd	6	8	48	Specialist training (lifting loads), Safe working procedures, Safety Footwear, appointed first aider	6	4	24	Regular inspections

PLAN OF WORK THE CHEQUERS

REF	HAZARD	RISK	AFFECTED	UN-MODIFIED RISK			CONTROLS	RESIDUAL RISK			REMARKS
				S = Severity, P = Probability, T = Total				S = Severity, P = Probability, T = Total			
				S	P	T		S	P	T	
RA11	Vehicle Movements & Deliveries	Cuts, bruising, minor injuries - to death by crushing / impact	OPS Client 3rd	10	4	40	Segregation of Traffic and Pedestrian walkways, Hi vis clothing, appointed first aider, Mobile phones for emergency calls	10	2	20	Care and attention when working close to vehicle routes
RA05	Electrical Plant & Equipment	Electric shocks burns and possible death / fire	OPS Client 3rd	10	9	90	All plant and equipment to be PAT tested, All plant and equipment to be inspected for condition before use (withdrawn from service if any damage observed). Do not use in wet / rainy conditions	10	1	10	Condition check prior to use
RA06	Hand & Power tools (hammer, bolster, battery drill)	Cuts, bruising, minor injuries	OPS Client 3rd	5	5	25	Training, supervision, safe systems of work.	5	3	15	Condition check prior to use
RA09	Bio-Hazard (Vermin / animal infestation)	Chronic illness (e.g. Weils disease)	OPS Client 3rd	10	5	50	Safe working procedure. Protect cuts, scratches and abrasions with waterproof dressing or plaster. Gloves, Type 5/6 disposable overalls, no smoking or drinking. Toolbox talk on symptoms	10	1	10	If any signs of infection occur or are suspected seek medical advise immediately
RA01A	Rubble on roof	Cuts, bruising, minor injuries, concussion	OPS	5	2	10	Check roof prior to start. Stop work if present Hard hats Gloves	5	1	10	

PLAN OF WORK THE CHEQUERS

REF	HAZARD	RISK	AFFECTED	UN-MODIFIED RISK			CONTROLS	RESIDUAL RISK			REMARKS
				S = Severity, P = Probability, T = Total				S = Severity, P = Probability, T = Total			
				S	P	T		S	P	T	
RA10	Drug Use	Chronic Infectious Diseases (Hepatitis, Aids etc...)	OPS Client 3rd	8	4	32	Check for evidence, if present stop work and contact Contract Supervisor	8	2	16	Regular inspections
RA12	Domestic Working	Minor to major injuries from assault	OPS Client 3rd	8	5	40	No lone working, explain the meaning of the warning signs, do not attempt to restrain the individual, safe working procedure. Mobile phone for emergencies. ID badges	8	3	24	Contact Contracts Supervisor if threatened
RA13	Flammable Gas / Liquid (generator)	Burns, major injuries and death from asphyxiation / explosion / fire	OPS Client 3rd	10	6	60	Safe working procedure No smoking on site No naked flames	10	1	10	Condition check prior to use
RA14	Vibration (Reciprocation saw)	HAVS	OPS	8	6	48	Only use equipment if in good condition, Job rotation, Gloves, Talk Box Talk	8	1	8	Supervision of activities
RA15	Drug Use	Chronic Infectious Diseases (Hepatitis, Aids etc...)	OPS Client 3rd	8	4	32	Toolbox Talk on possible locations of needles Needle resistant gloves Safety boots (with sole plate)	8	1	8	Supervision of activities

0 –20 Low Score Safe as assessed
 21 –49 Moderate Caution to be Adopted
 50+ High Risk Adopt alternate method where practical
 This assessment has been carried out by: Dave Pienaar 03/07/2016
 Score risk evaluation rating 1-10 (1 = Reportable accident, 10 = Death).

QMF 3200 RISK ASSESSMENTS

12.0 ACCEPTANCE OF METHOD STATEMENT

All personnel working on this project **MUST** sign below to say that they have fully read and understood all of the items included in this method statement and the associated Risk / COSHH Assessments. By signing, each operative confirms that he/she will work to it correctly as instructed.

Print Name Supervisor or Operative in Charge	Signature	Date
When signing this section, the Supervisor or Operative in Charge is confirming that the method is appropriate for the task in hand and that any amendments that are minor in nature, have been authorised by the Contract Supervisor and are detailed in the amendment page.		
Work is not allowed to proceed if major changes are required (including drawing revisions, changes to method etc...) until a full revision of the POW has been issued to site.		
Print Name (Operative)	Signature	Date

The Hazardous Waste Regulations 2005: Consignment Note

Tel: 01708 866060
Email: info@asbestoswastesolutions.co.uk
Web: www.asbestoswastesolutions.co.uk



PART A Notification details

1 Consignment note code: **W O O D S E / B 8 0 0 2**

2 The waste described below is to be removed from

**CHEQUERS ROAD GARAGES
LOUGHTON
ESSEX
IG10 3QF**

3 The waste will be taken to

**PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB**

4 The waste producer was

**AA WOODS LIMITED
WOODS HOUSE RIVER WAY
HARLOW ESSEX CM20 2DP**

PART B Description of the waste

If continuation sheet used, tick here ☐

1 The process giving rise to the waste(s) was: **ASBESTOS REMOVAL** 2 SIC (2007) for the process giving rise to the waste: **3 9 . 0 0 /**

3 WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code)(6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:	Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
			Component	Concentration (% or mg/kg)		
CEMENT ROOF SHEETS	1 7 0 6 0 5		CHRYSTOTILE	< 10 %	SOLID	HP5 / HP7 35YD

The information given below is to be completed for each EWC Identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN class(es)	Packing group(s)	Special handling requirements
1 7 0 6 0 5	2590	CHRYSTOTILE ASBESTOS	9	III	Double Bagged / Wrapped

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached, tick here ☐)

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements.

Where this note comprises part of a multiple collection the round number and collection number are:

/

1 Carrier name:

**PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB
CBDU133922**

2 Carrier registration no.

3 Vehicle registration no.:

GF57 LLS

Signature

[Signature]

Date **05072017** Time **0930**

PART D Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1. Consignor name:

**On behalf of AA WOODS LIMITED
WOODS HOUSE RIVER WAY
HARLOW ESSEX CM20 2DP**

Signature

[Signature]

Date **05072017** Time **0930**

PART E Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)
1 7 0 6 0 5	5000	A	D15

1 I received this waste at the address given in A4 on:

Date **05072017** Time **1035**

Skip No: **3588**

2 Vehicle registration no.:

Name:

3 Where waste is rejected please provide details:

On behalf of:

**PINDEN LTD PINDEN QUARRY
GREEN ST GREEN RD LONGFIELD
DARTFORD KENT DA2 8EB**

I certify that waste permit number.

BV 1674 IL

authorises the management of the waste described in B at the address given in A4.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are: ☐

Signature

Date **05072017** Time **1035**

[Signature]

Site Name: ASBESTOS WASTE
SOLUTIONS
Site Address: CHEQUERS ROAD
GARAGES
Postcode: IG10 3QF
Sic Code: 39000
**Customer Order
No:** B8003

Vehicle Reg: GF57ELC
Haulier: PINDEN
**Waste Carrier
Reg:** CBDU133922
**Consignment
Note No:** WOODSB/B8002

Product Code: ASBW1

Description: CEMENT BONDED
ASBESTOS-MIN 2 TONNE
Unit of Sale: Tonnes

EWC Code: 170605
Description: CONSTRUCTION
MATERIALS WITH
ASBESTOS

Weights

Tare: 17840.00
Tally No: 21403
Gross: 22840.00
Tally No: 152502
Net: 5000.00
Quantity: 5.000

I confirm that I have fulfilled my duty to apply the
waste hierarchy as required by regulation 12 of
the Waste (England and Wales) Regulations
2011.

Driver's Name

RICHARD WHITE

Weighbridge Operator

emma

Operator's Signature

E Searle

APPENDIX F

PHASE 2 SITE INVESTIGATION: SAMPLING AND ANALYSIS PLAN (SAP)

CHEQUERS ROAD (SITE B), LOUGHTON, IG10 3QF
PHASE 2 SITE INVESTIGATION:
SAMPLING AND ANALYSIS PLAN (Rev A)

The Site is owned by Epping Forest District Council and occupied by a series of garages for local residents. Planning approval was granted for the demolition of the existing garages and replacement with 5 No. two-storey affordable residential units with rear garden areas, car parking, vehicle access and landscaping on 2 February 2016 (Ref: EPF/2609/15).

A Phase 1 Contaminated Land Assessment (Ref: CB/JEB/P18-1639/01) was completed in November 2018 to discharge Planning Condition No. 6. The contaminated land assessment identified potential pollutant linkages associated with poor quality made ground associated with site development in 1960s, on-site electricity substation and the presence of an underground oil/water interceptor. A preliminary assessment of the potential presence of Unexploded Ordnance was assessed (Report Ref: EP7780-00) and a detailed assessment was recommended. UXO risk mitigation measures may be necessary during any intrusive works on the Site.

In order to further assess the potential exposure risk posed by on-site contamination sources identified to Construction Workers and future Site Residents, a site investigation was recommended to confirm the quality of the underlying made ground in particular in the rear garden and soft landscaped areas, as well as the soils around the oil/water interceptor.

In order to achieve these objectives and as required by Condition No. 7, the scope of works outlined in the Table 1 (below) is proposed and the borehole locations are illustrated in Figure 1 (overleaf).

Table 1: Sampling and Analysis Plan (SAP)

Target / Scope	Suite of Testing
<u>Private Garden Areas / Soft Landscaped Areas</u> <ul style="list-style-type: none">• 4 No. boreholes to 5m depth (or refusal) across Site, targeting private gardens and soft landscaped areas where accessible (BH01-BH04).• Collection of shallow made ground samples from each borehole location.• Submission to M-CERTS accredited laboratory for standard suite of total and leachability tests.	<ul style="list-style-type: none">• Total and leachability testing for a standard suite of organic and inorganic parameters (asbestos, metals, inorganics, total petroleum hydrocarbons, polycyclic aromatic hydrocarbons and phenols).
<u>Electricity Substation</u> <ul style="list-style-type: none">• Not accessible until substation removed; concrete slab below substation building and underlying soils should be inspected and tested (SS01) to assess any impact and removed / replaced with cover system if impacted.	<ul style="list-style-type: none">• Total Petroleum Hydrocarbons and Polychlorinated Biphenyls (PCBs).
<u>Oil / Water Separator</u> <ul style="list-style-type: none">• 1 No. borehole to 5m depth (or refusal) adjacent to separator (BH04).• Collection of shallow and / or deep sample(s), subject to field observations.• Collection of water / sludge sample within separator chamber (if present).• Submission to M-CERTS accredited laboratory for speciated Total Petroleum Hydrocarbon test.	<ul style="list-style-type: none">• Total Petroleum Hydrocarbons (Criteria Working Group) test.

CHEQUERS ROAD (SITE B), LOUGHTON, IG10 3QF
PHASE 2 SITE INVESTIGATION:
SAMPLING AND ANALYSIS PLAN (Rev A)

Target / Scope	Suite of Testing
<p><u>Ground Gas Risk</u></p> <ul style="list-style-type: none"> Installation of monitoring wells in all boreholes to enable ground gas monitoring (BH01—BH04). Ground Gas monitoring from all monitoring wells. 	<ul style="list-style-type: none"> Ground gas monitoring (CH₄ CO₂, O₂ and gas flow) in all boreholes and groundwater level.

Figure 1: Indicative Borehole Location Plan

