Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
287	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 15.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SE (NW)	768	5	470345 106129
288	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SE (SE)	771	5	471987 104971
289	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 39.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SE (NW)	774	5	470332 106109
290	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 4.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SE (SE)	776	5	471984 104961
291	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 10.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SE (SE)	776	5	471991 104969
292	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	778	5	471903 106529
293	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 11.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SE (SE)	780	5	471985 104957
294	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 3.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (W)	782	5	470312 106076
295	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 66.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SE (NW)	783	5	470333 106138

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
296	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 160.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	784	5	471901 106536
297	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 118.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	784	5	471901 106536
298	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1609.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SE (SE)	788	5	471985 104945
299	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 79.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SE (NW)	795	5	470463 106371
300	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 40.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13NE (NW)	800	5	470474 106392
301	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 70.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A7SW (S)	809	5	471576 104704
302	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 73.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7SW (S)	809	5	471576 104704
303	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	828	5	470309 106197
304	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 298.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A12SE (E)	862	5	472450 105546

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
305	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 489.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Storehouse Lake Catchment Name: Not Supplied Primacy: 1	A5NW (SW)	862	5	470306 105123
306	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	864	5	470276 106210
307	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 317.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A3NW (S)	865	5	471554 104641
308	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 239.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	889	5	470258 106231
309	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	889	5	470258 106231
310	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 124.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	890	5	470258 106234
311	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 24.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	899	5	471935 106650
312	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 22.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	906	5	471862 106691
313	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	923	5	471943 106672

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
314	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	928	5	471867 106713
315	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 51.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	930	5	471867 106714
316	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 483.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A15NE (NE)	936	5	471950 106683
317	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A13SW (NW)	966	5	470233 106348
318	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 2	A13SW (NW)	968	5	470231 106349
319	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 38.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 2	A13SW (NW)	972	5	470227 106348
320	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A19SE (NE)	981	5	471880 106764
321	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: East Hampshire Primacy: 1	A19SE (NE)	985	5	471881 106768

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
322	**BGS Recorded Landfill Sites** Site Name: Storhouse Lake Tip Location: HAVANT, Hants Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Unknown Boundary Accuracy: Not Applicable	A9SW (W)	981	-	470100 105600
323	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Brockhampton, Hampshire Name: Land South Of Budds Farm Sewage Works Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20826 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 1700/1304 BGS Ref: Not Supplied Other Ref: FHA10, HAV4	A6NW (SW)	191	2	470948 105358
324	**Historical Landfill Sites** Licence Holder: Hampshire County Council Location: Harts Farm Way, Havant Name: Harts Farm Way Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20831 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: FHA15, 1760/1/13/6	A9SE (W)	690	2	470391 105561
325	**Integrated Pollution Control Registered Waste Sites** Name: Onyx Hampshire Ltd Location: Brockhampton Incinerator, Harts Farm Way, HAVANT, Hampshire, PO9 1JN Authority: Environment Agency, Southern Region Permit Reference: AY3199 Dated: 9th April 1997 Process Type: IPC minor (non-substantial) variation to previous variation Description: 5.1 A (C) Incineration within the Waste Disposal Industry **Status: Authorisation revoked** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	535	2	470526 105813
325	**Integrated Pollution Control Registered Waste Sites** Name: Onyx Hampshire Ltd Location: Brockhampton Incinerator, Harts Farm Way, HAVANT, Hampshire, PO9 1JN Authority: Environment Agency, Southern Region Permit Reference: AG8276 Dated: 13th May 1993 Process Type: IPC application for process that was regulated by HMIP for air releases under previous legislation Description: 5.1 A (C) Incineration within the Waste Disposal Industry **Status: Authorisation superseded by a substantial or non substantial variation** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	536	2	470526 105808
325	**Integrated Pollution Control Registered Waste Sites** Name: Onyx Hampshire Ltd Location: Brockhampton Incinerator, Harts Farm Way, HAVANT, Hampshire, PO9 1JN Authority: Environment Agency, Southern Region Permit Reference: AR5260 Dated: 31st May 1995 Process Type: IPC minor (non-substantial) variation to previous variation Description: 5.1 A (C) Incineration within the Waste Disposal Industry **Status: Authorisation superseded by a substantial or non substantial variation** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	541	2	470521 105808

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
326	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Bedhampton Landfill Licence Number: 210123 Location: Bedhampton Waterworks, Meyrick Road, Bedhampton, Hampshire, PO9 1NN Licence Holder: Portsmouth Water Ltd Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Inert LF Max Input Rate: Not Supplied **Licence Status:** **Issued** Issued: 21st April 2005 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14SW (NW)	593	2	470718 106343
327	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Bedhampton Waterworks Licence Number: 19988 Location: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire, PO9 1NN Licence Holder: Portsmouth Water Company Ltd Authority: Environment Agency - Southern Region, Hampshire and Isle of Wight Area Office Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Max Input Rate: Not Supplied **Licence Status:** **Inactive** Issued: 18th February 1992 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14SW (NW)	598	2	470717 106349
328	**Licensed Waste Management Facilities (Locations)** Licence Number: 400450 Location: Teleplan, Langstone Road, Havant, Hampshire, PO9 1SA Operator Name: Teleplan And White Electronics B V Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: WEEE treatment facility **Licence Status:** **Issued** Issued: 13th June 2013 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (W)	0	2	471154 105715
329	**Licensed Waste Management Facilities (Locations)** Licence Number: 19991 Location: Havant Lorry Park, Southmoor Lane, Havant, Hampshire, PO9 1JW Operator Name: Sita Solent Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status:** **Surrendered** Issued: 29th September 1997 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 19th October 2010 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NW (W)	302	2	470778 105717
330	**Licensed Waste Management Facilities (Locations)** Licence Number: 400061 Location: Budds Farm Ww T W, Southmoor Lane, Havant, Hampshire, PO9 1JW Operator Name: Southern Water Services Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Landfill Gas Engine (<3 mW) **Licence Status:** **Modified** Issued: 10th April 2013 Last Modified: 23rd March 2018 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10SW (W)	381	2	470700 105500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
330	**Licensed Waste Management Facilities (Locations)** Licence Number: 19990 Location: Southmoor Lane, Budds Farm, Havant, Hampshire, PO9 1JW Operator Name: Southern Water Services Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Treatment - Biological **Licence Status: Modified** Issued: 16th February 1996 Last Modified: 6th August 2014 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10SW (SW)	385	2	470700 105450
331	**Licensed Waste Management Facilities (Locations)** Licence Number: 100089 Location: Havant Waste Transfer Station, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Keltbray Environmental Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Transferred** Issued: 17th September 2007 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NW (W)	390	2	470672 105805
331	**Licensed Waste Management Facilities (Locations)** Licence Number: 10221 Location: Harts Farm Way Transfer Station, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: T J Waste & Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Transferred** Issued: 23rd November 2000 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NW (W)	405	2	470658 105792
332	**Licensed Waste Management Facilities (Locations)** Licence Number: 401716 Location: Havant Grid Substation, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Southern Electric Power Distribution Plc Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Storage of electrical insulating oils **Licence Status: Modified** Issued: 11th May 2015 Last Modified: 6th October 2017 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	446	2	470630 105710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
333	**Licensed Waste Management Facilities (Locations)** Licence Number: 19989 Location: Havant Incinerator, Harts Farm Way, Havant, Hampshire Operator Name: Associated Environmental Projects (Hampshire) Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Surrendered** Issued: 21st June 1993 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 26th November 2001 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	524	2	470541 105918
333	**Licensed Waste Management Facilities (Locations)** Licence Number: 10229 Location: Harts Farm Way Depot, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Hampshire County Council Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Surrendered** Issued: 19th December 2002 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 23rd September 2013 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (W)	562	2	470500 105900
334	**Licensed Waste Management Facilities (Locations)** Licence Number: 104552 Location: Conroys Recycling Ltd, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Conroys Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Physical Treatment Facilities **Licence Status: Surrendered** Issued: 17th December 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 9th August 2018 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	528	2	470543 105725
334	**Licensed Waste Management Facilities (Locations)** Licence Number: 19983 Location: Land/ Premises At, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Hopkins Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Modified** Issued: 29th June 1993 Last Modified: 19th August 2004 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	536	2	470530 105760
334	**Licensed Waste Management Facilities (Locations)** Licence Number: 10275 Location: Havant H W R C, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Hopkins Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household Waste Amenity Sites **Licence Status: Surrendered** Issued: 18th September 2006 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 23rd December 2013 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	550	2	470518 105738

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
335	**Licensed Waste Management Facilities (Locations)** Licence Number: 103260 Location: Havant H W R C, Harts Farm Way, Havant, Hampshire, PO9 1JN Operator Name: Veolia E S Hampshire Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Non-hazardous & hazardous HWA Site **Licence Status: Transferred** Issued: 2nd March 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (W)	560	2	470500 105850
336	**Licensed Waste Management Facilities (Locations)** Licence Number: 10279 Location: Bedhampton Water Works, Meyrick Road, Havant, Hampshire, PO9 1NN Operator Name: Portsmouth Water Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Transfer Stations Taking Non-biodegradable Wastes **Licence Status: Modified** Issued: 29th June 2007 Last Modified: 18th July 2016 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	646	2	470680 106380
337	**Licensed Waste Management Facilities (Locations)** Licence Number: 210123 Location: Bedhampton Waterworks, Meyrick Road, Bedhampton, Hampshire, PO9 1NN Operator Name: Portsmouth Water Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Inert LF **Licence Status: Issued** Issued: 21st April 2005 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: NP3439 Positional Accuracy: Located by supplier to within 10m	A13NE (NW)	711	2	470600 106390
337	**Licensed Waste Management Facilities (Locations)** Licence Number: 19988 Location: Bedhampton Waterworks, Meyrick Road, Havant, Hampshire, PO9 1NN Operator Name: Portsmouth Water Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) **Licence Status: To PPC** Issued: 18th February 1992 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: NP3439PN Positional Accuracy: Located by supplier to within 10m	A13NE (NW)	711	2	470600 106390

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
338	**Licensed Waste Management Facilities (Locations)** Licence Number: 19986 Location: 8 New Lane, Havant, Hampshire, PO9 2JH Operator Name: Wessex Construction And Plant Ltd Operator Location: Not Supplied Authority: Environment Agency - Southern Region, Hampshire and Isle of Wight Area Office Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Expired** Issued: 5th December 1991 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	973	2	472130 106610
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	471296 105698
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	6	471296 105698
339	**Local Authority Recorded Landfill Sites** Location: Southmoore Lane Reference: 2 Authority: Havant Borough Council, Environmental Health Department **Last Reported Status: Closed** Types of Waste: Household, Acid, Commercial Date of Closure: 31/12/1965 Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A6NW (SW)	201	3	470943 105349
340	**Local Authority Recorded Landfill Sites** Location: Broadmarsh Site Reference: 4 Authority: Havant Borough Council, Environmental Health Department **Last Reported Status: Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A9SE (W)	687	3	470392 105585
341	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A14NE (N)	765	-	471276 106677
342	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A10NE (N)	0	-	471282 105893
343	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A10NE (N)	0	-	471240 105899
344	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A11SW (E)	0	-	471479 105651
345	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1914	A11SW (SE)	0	-	471449 105631
346	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1942	A10NE (W)	0	-	471162 105740
347	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1942	A10SE (SW)	0	-	471185 105589
348	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1942	A10SE (S)	0	-	471289 105617

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
349	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1942	A10SE (S)	0	-	471314 105636
350	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1914	A11NW (N)	15	-	471337 105905
351	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A10NE (N)	58	-	471278 105961
352	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1914	A10NE (N)	97	-	471253 106005
353	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A11NW (NE)	109	-	471530 105964
354	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1914	A15SW (N)	167	-	471331 106064
355	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A10NW (W)	181	-	470875 105808
356	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A11NE (E)	246	-	471845 105725
357	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A14SE (N)	279	-	471157 106203
358	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A11SE (E)	311	-	471909 105663
359	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1870	A9SE (W)	509	-	470573 105567
360	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A12NW (E)	543	-	472124 105847
361	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1870	A9SE (W)	582	-	470512 105383
362	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1870	A9NE (W)	638	-	470409 105727
363	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1932	A12NW (E)	649	-	472204 105941
364	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A15NE (NE)	657	-	471713 106480
365	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A9SE (W)	679	-	470403 105566
366	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1870	A7SE (SE)	756	-	471679 104795
367	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A7SE (SE)	842	-	471781 104744
368	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A16NW (NE)	903	-	472143 106505
369	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1898	A19SW (N)	913	-	471341 106816

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
370	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A12SE (E)	941	-	472533 105575
371	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A3NE (SE)	986	-	471913 104649
372	**Registered Landfill Sites** Licence Holder: Portsmouth Water Plc Licence Reference: 13/ 25A Site Location: Bedhampton Waterworks, Meyrick Road, HAVANT, Hampshire, PO9 1NN Licence Easting: 470600 Licence Northing: 106360 Operator Location: PO Box 8, West Street, HAVANT, Hampshire, PO9 1LG Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Operational as far as is knownOperational Dated: 14th November 1991 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Inert Waste From Pipework Excavation Prohibited Waste: Biodegradable Waste Brick And Concrete Rubble Clinical - As In Wmp 25 Construction And Demolition Wastes Food/Vegetable Matter Hazardous Wastes Land Clear.Waste Contam. > Background Liquid/Slurry/Sludge Wastes Paper/Cardboard/Packaging Phenols/Mat'Ls Cont. Phenol Plaster Poisonous, Noxious, Polluting Wastes Rubble Ex Prems Storing Tox/Sol.Chems Special Wastes Timber Waste N.O.S.	A13SE (NW)	689	2	470600 106360
373	**Registered Landfill Sites** Licence Holder: Hampshire C.C. Licence Reference: 13/ 4 RES Site Location: Harts Farm Way, Havant, Hampshire Licence Easting: 470100 Licence Northing: 105600 Operator Location: The Castle, Winchester, Hampshire Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 20th July 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Civic Amenity/Refuse Amenity Waste Concrete Waste Construction And Demolition Wastes Excavated Natural Materials $ Hardcore And Rubble Household, Crude Waste Incinerator Residues Silt And Dredgings Prohibited Waste: Liquid Wastes	A9SW (W)	981	2	470100 105600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
374	**Registered Waste Transfer Sites** Licence Holder: A & J Bull (Solent) Ltd Licence Reference: HV 038 Site Location: Havant Lorry Park, Southmoor Lane, Havant, Hampshire Operator Location: 4 London Wall Buildings, Blomfield Street, LONDON, Greater London, EC2M 5UQ Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 29th September 1997 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Concrete And Brick Rubble Construction And Demolition Wastes Max.Waste Permitted By Licence Soil Prohibited Waste: Pressurised Cont'Rs Rapidly Biodeg/Food/Veg.Mat'L Spec.Waste (Epa'90:S62/1996 Regs) Waste N.O.S.	A10SW (W)	281	2	470800 105700
375	**Registered Waste Transfer Sites** Licence Holder: Skips R Us Ltd Licence Reference: EAWML10221 Site Location: Harts Farm Way, Bedhampton, HAVANT, Hampshire, PO9 1JN Operator Location: Harts Farm Way, Bedhampton, HAVANT, Hampshire, PO9 1JN Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 23rd November 2000 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Batteries Degradable Commercial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.02) Degradable Household Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.01) Inert Materials (As In Post'98 E.A.Lics And Equivalent To 21.00.00) Metal Waste/Scrap Metal (As In Post'98 E.A.Lics And Equivalent To 23.00.00) Special Waste (As In Epa 1990:S62 Of 1996 Regs) - Comprising Prohibited Waste: Degradable Industrial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.03) Material With Any Haz.Code (H1, H2, H3a,H3b,H4,H5,H6,H7,H8,H9,H10,H11,H12,H13,H14) Other Waste / Waste Not Otherwise Specified Powders Sludge / Liquid / Paste / Wet Wastes Special Waste (As In Epa 1990:S62 Of 1996 Regs) Not Otherwise Specified Waste Solely/Mainly Finely Divided Metals Or Dusts/Powders/Loose Fibres Wastes Likely To Produce Offensive Odours	A10NW (W)	369	2	470700 105750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
376	**Registered Waste Transfer Sites** Licence Holder: Assoc.Environmental Proj.(Hants) Ltd Licence Reference: HV 030 Site Location: Recycling Storage Bays, Havant Incinerator, Havant, Hampshire Operator Location: 37-41 Old Queen Street, LONDON, Greater London, SW1H 9JA Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Site dormant Dated: 21st June 1993 Preceded By Licence: Not Given Superseded By Licence: HV 006A Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste: Ferrous/Non-Ferrous Cans Glass Paper/Cardboard Waste Plastics Prohibited Waste: Clinical - As In Wmp 25 Liable To Cause Environmental Hazards Liquid/Slurry/Sludge Wastes Poisonous, Noxious And Polluting N.O.S Rubble Ex Prem Stor.Tox/Water Sol.Chem Special Wastes Waste N.O.S.	A9NE (W)	525	2	470540 105920
377	**Registered Waste Transfer Sites** Licence Holder: Hampshire Recycling Ltd Licence Reference: HV 006A Site Location: Harts Farm Way C.A.Site, HAVANT, Hampshire, PO9 1JN Operator Location: Unit 10 Bridge Farm, Curbridge, Botley, SOUTHAMPTON, Hampshire, SO30 2HB Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Civic Amenity Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 24th November 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste: Com. Waste Solely For Reuse/Recycling Maximum Waste Permitted By Licence Waste Deposited By Householders Prohibited Waste: Liq.Waste N.O.S. (Exc. Oils For Recyc) Special Wastes N.O.S. (Exc.H'Holders) Waste N.O.S.	A9NE (W)	536	2	470530 105760

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste Transfer Sites				
378	Licence Holder: Wessex Construction Plant & Hire Co Ltd Licence Reference: 13/ 20B Site Location: New Lane, HAVANT, Hampshire, PO9 2JH Operator Location: As Site Address Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 1st February 1990 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Adhesive Wastes Ash,Clinker Clay,Pottery,China,Enamel,Ceramic,Mica Coal,Coke,Carbon,Graphite Construction And Demolition Wastes Cork Ferrous & Non-Ferrous Metal Scrap Glass/Cullet Max.Storage Permitted By Licence Oiled/Tarred Paper < 5% Of Daily Input Paper/Pack'G Ex Com./Ind. Premises Prods Of Complete Polymerisation Sand,Chalk,Gravel,Nat.Occ.Earth Spoils Sawdust/Sanderdust Solid Rubber Timber,Wood Offcuts, Hardboard Vehicle Tyres To Be < 5% Daily Input Waste Ex Const'N/Maint. Of Highways Prohibited Waste: All Clinical Wastes In Wmp 25 All Fibrous Forms Of Asbestos Food/Veg/Readily Biodegradable Waste Liq/Slurry/Sludge Waste - Except Above Mat'L Ex Oil Fired Boilers Mat'Ls Contain. Phenols Or Derivs. Old Cars/Vehicles/Trailers Poisonous, Noxious, Polluting Wastes Potentially Haz. Or Polluting Wastes Special Wastes Waste N.O.S.	A16NW (NE)	959	2	472120 106600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste Treatment or Disposal Sites				
379	Licence Holder: Larkham Bros Ltd Licence Reference: 13/ 18 Site Location: 12b Clarendon Road, Havant, Hampshire Operator Location: As Site Address Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Scrapyard Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st August 1990 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Scrap Metal (As In 1964 Act) Prohibited Waste: Biodegradable Mat'Ls Drums -Unless Empty Or Cont'S Conform Food Waste Liquid/Sludge Wastes -Except As Above Paper/Cardboard/Packaging Waste Phenols/Mat'L Containing Phenol Poisonous, Noxious, Polluting Wastes Potentially Haz. Or Polluting Waste Special Wastes - Except As Above Vegetable Matter Waste Ex Prems.Of Toxic/Water Sol.Chem Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Assoc. Asbestos Assoc. Battery Acids Assoc. Drainings From Rad'Rs & Transf' Assoc. High Hazard Mat'Ls Assoc. Mineral Engine Oils Assoc. Solid/Liquid Residues	A15SW (N)	248	2	471400 106130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
380	**Registered Waste Treatment or Disposal Sites** Licence Holder: Southern Water Services Ltd Licence Reference: HV 032A Site Location: Budds Farm W.T.Works, Southmoor Lane, Havant, Hampshire Operator Location: Southern House, Sparrowgrove, Otterbourne, WINCHESTER, Hampshire, SO21 2SW Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Treatment - Biological Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 16th February 1996 Preceded By Licence: HV 032 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Alcohols (Brewing/Distilling) Alkalis Ammonium Salts Amylase Starches Aqueous Biodegradable Waste Bacterial Sludges/Slurries Bentonite Slurries Biodegradable Waste Sludges Blood, Fat, Grease Cement Washings Chemical Processing Wastes Concrete Waste Cooling Water Cosmetic Waste Detergent Waste Drilling Muds Farm Slurry Fibreglass Slurry Filter Materials Food Processing Wastes/Starch Glue Wastes Gulley Emptyings Hide Curing Waste Hypochlorites And Chlorites Inorganic Materials Interceptor Wastes Landfill Leachates Milk Wastes Mineral Slurries/Processing Wastes Miscellaneous Wastes Including Oil/Water Mixtures Organic Compounds Paper Sludges Sewer Grit Silt And Dredgings Soakaway Contents Soap Waste Surface & Flood Waters Water Works Sludges Prohibited Waste: Max.Waste Permitted By Licence Special Waste (As In Epa 1990:S62 Of 1996 Regs) Waste N.O.S.	A10SW (SW)	385	2	470700 105450
380	**Registered Waste Treatment or Disposal Sites** Licence Holder: Southern Water Services Ltd Licence Reference: HV 032 Site Location: Budds Farm W.T.Works, Southmoor Lane, Havant, Hampshire Operator Location: Southern House, Sparrowgrove, WINCHESTER, Hampshire, SO21 2SW Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Treatment Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st November 1992 Preceded By Licence: Not Given Superseded By Licence: HV 032A Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Max.Waste Permitted By Licence-Stated Waste As In Appl'N/Working Plan Prohibited Waste: Special Wastes (As In S17 Copa 1980) Waste N.O.S.	A10SW (SW)	395	2	470700 105400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste Treatment or Disposal Sites				
381	Licence Holder: B.M. Recycling Ltd Licence Reference: 13/ 4 Site Location: Brockhampton Incinerator, Harts Farm Way, Havant, Hampshire Operator Location: 7 Eagle Avenue, Cowplain, PORTSMOUTH, Hampshire, PO8 9UB Authority: Environment Agency - Southern Region, Hampshire Area Site Category: Incineration Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 18th May 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Controlled Wastes Licenced Wastes Not To Hand	A9NE (W)	581	2	470480 105810

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	A10SE (N)	0	1	471296 105698
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (N)	0	1	471296 105698
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (W)	60	1	471000 105698
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (E)	400	1	472000 105698
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A13NE (NW)	893	1	470423 106474
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: 1.8 - 2.2 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (E)	900	1	472500 105698
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (E)	920	1	472500 105500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (E)	948	1	472500 106000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: no data Chromium Concentration: 60 - 90 mg/kg Lead Concentration: no data Nickel Concentration: 15 - 30 mg/kg	A2NE (S)	983	1	471296 104500
382	**BGS Recorded Mineral Sites** Site Name: Bedhampton Wharf Location: Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 10487 Type: Wharf **Status: Active** Operator: Tarmac (A Crh Company) Operator Location: Not Supplied Periodic Type: Quaternary Geology: Marine Deposits Commodity: Marine Sand And Gravel Positional Accuracy: Located by supplier to within 10m	A9SE (W)	597	1	470485 105605
383	**BGS Recorded Mineral Sites** Site Name: Havant Park Brick Field Location: Havant, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 163109 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: River Terrace Deposits (Undifferentiated) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A18SE (N)	817	1	471293 106727
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	471207 105675
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	471470 105631
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	471203 105628

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	59	1	471308 105989
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	146	1	471065 106051
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	0	1	471384 105861
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	471207 105675
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	146	1	471065 106051
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	97	1	471306 106014
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	103	1	471111 106024
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	0	1	471384 105861
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	471203 105628
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	91	1	471308 105989
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	471470 105631
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	471207 105675
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	0	1	471296 105922
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	471276 105672

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	0	1	471296 105922
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	471296 105698
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	471276 105672

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
384	**Contemporary Trade Directory Entries** Name: Diamond Print & Mail Centre Ltd Location: Langstone Technology Park,Langstone Road, Havant, Hampshire, PO9 1SA Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A10SE (W)	0	-	471281 105702
385	**Contemporary Trade Directory Entries** Name: Xyratex Location: Langstone Road, Havant, Hampshire, PO9 1SA Classification: Computer Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	0	-	471216 105828
385	**Contemporary Trade Directory Entries** Name: Saacke Combustion Services Ltd Location: Langstone Technology Park 2b, Langstone Road, Havant, Hampshire, PO9 1SA Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	0	-	471216 105828
386	**Contemporary Trade Directory Entries** Name: Protool Manufacturing Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Tool Design, Manufacturers & Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (W)	15	-	471067 105619
386	**Contemporary Trade Directory Entries** Name: Mustrade Blinds & Shutters Location: Southmoor Lane Workspace, Southmoor Lane, Havant, PO9 1JW Classification: Blinds, Awnings & Canopies **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (W)	54	-	471027 105642
386	**Contemporary Trade Directory Entries** Name: Total Appliance Repair Location: Southmoor Lane Workspace, Southmoor Lane, Havant, PO9 1JW Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (W)	54	-	471027 105642
386	**Contemporary Trade Directory Entries** Name: East-West Trading Location: Southmoor Lane, Havant, PO9 1JW Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (W)	55	-	471027 105618
387	**Contemporary Trade Directory Entries** Name: Tate Technical Location: Unit C5 Endeavour Business Park,Penner Road, Havant, Hampshire, PO9 1QN Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A11SW (S)	21	-	471367 105465
387	**Contemporary Trade Directory Entries** Name: British Maids Location: Unit C/2, Cairo Place, 7, Penner Road, Havant, Hampshire, PO9 1QN Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (S)	22	-	471327 105465
387	**Contemporary Trade Directory Entries** Name: Formready Ltd Location: Unit C2, Cairo Place, 7, Penner Road, Havant, PO9 1QN Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (S)	22	-	471327 105465
387	**Contemporary Trade Directory Entries** Name: Engineering & Design Services Location: Unit C2, Cairo Place, 7, Penner Road, Havant, PO9 1QN Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SW (S)	22	-	471342 105465

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
387	**Contemporary Trade Directory Entries** Name: Tate Building Services Ltd Location: Unit C5, Cairo Place, 7, Penner Road, Havant, PO9 1QN Classification: Air Conditioning & Refrigeration Contractors **Status: Active** Positional Accuracy: Automatically positioned to the address	A11SW (S)	25	-	471359 105461
388	**Contemporary Trade Directory Entries** Name: Rowland Way Ltd Location: Southmoor Lane, HAVANT, Hampshire, PO9 1JW Classification: Spraying - Paint & Coatings **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	29	-	471053 105571
388	**Contemporary Trade Directory Entries** Name: Seward Location: Langstone House, Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Commercial Vehicle Bodybuilders & Repairers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	55	-	471027 105531
388	**Contemporary Trade Directory Entries** Name: Seward Location: Langstone House, Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	55	-	471027 105531
388	**Contemporary Trade Directory Entries** Name: Nationwide Seward Accident Repair Centres Havant Location: Langstone House,Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Active** Positional Accuracy: Manually positioned to the address or location	A10SE (SW)	59	-	471022 105527
388	**Contemporary Trade Directory Entries** Name: Aegina Technologies Ltd Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (W)	72	-	471010 105589
388	**Contemporary Trade Directory Entries** Name: Aegina Technologies Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (W)	72	-	471010 105589
388	**Contemporary Trade Directory Entries** Name: Aegina Technologies Ltd Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (W)	72	-	471010 105589
388	**Contemporary Trade Directory Entries** Name: Aegina Technologies Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Aviation Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (W)	72	-	471010 105589
388	**Contemporary Trade Directory Entries** Name: Aegina Technologies Ltd Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (W)	72	-	471010 105589
388	**Contemporary Trade Directory Entries** Name: Sewards Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	78	-	471004 105563
388	**Contemporary Trade Directory Entries** Name: Seward Lyndhurst Location: Unit 1, Southmoor Lane, Havant, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	78	-	471004 105563

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
388	**Contemporary Trade Directory Entries** Name: Nationwide Seward Accident Repair Centre Location: Unit 1, Southmoor Lane, Havant, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	78	-	471004 105563
388	**Contemporary Trade Directory Entries** Name: Seward Arc Location: Southmoor la, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A10SE (W)	88	-	470994 105588
388	**Contemporary Trade Directory Entries** Name: Havant Crane Hire Ltd Location: Southmoor La, Havant, Hampshire, PO9 1JW Classification: Crane Hire, Sales & Service **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A10SE (W)	88	-	470994 105588
388	**Contemporary Trade Directory Entries** Name: Dot In Print Location: Unit 5 Beaver Indust Est,Southmoor La, Havant, Hampshire, PO9 1JW Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SW (W)	121	-	470961 105578
388	**Contemporary Trade Directory Entries** Name: Seward Accident Repair Centre Location: Beaver Indu Estate,Southmoor La, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SW (SW)	121	-	470961 105546
389	**Contemporary Trade Directory Entries** Name: Wessex Advance Switching Location: Unit 3, Alexandria Park, 1, Penner Road, Havant, PO9 1QY Classification: Electronic Component Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	46	-	471091 105438
389	**Contemporary Trade Directory Entries** Name: Rentokil Pest Control Location: Logistics House,Penner Rd, Havant, Hampshire, PO9 1QY Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A10SE (SW)	57	-	471079 105429
389	**Contemporary Trade Directory Entries** Name: W A S P Ltd Location: Alexandria Park,1 Penner Road, Havant, Hampshire, PO9 1QY Classification: Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A10SE (SW)	57	-	471079 105429
390	**Contemporary Trade Directory Entries** Name: Diamond Premier Cleaning Services Location: 15, Brookmead Way, Havant, Hampshire, PO9 1RT Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A11SW (SE)	59	-	471489 105483
391	**Contemporary Trade Directory Entries** Name: Penguin Refrigeration Ltd Location: Unit 2/B, Alexandria Park, 1, Penner Road, Havant, Hampshire, PO9 1QY Classification: Refrigerators & Freezers - Servicing & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	65	-	471024 105469
391	**Contemporary Trade Directory Entries** Name: Precision Products Portsmouth Ltd Location: Unit 2/A, Alexandria Park, 1, Penner Road, Havant, Hampshire, PO9 1QY Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	82	-	471006 105469
391	**Contemporary Trade Directory Entries** Name: Precision Products Location: Unit 2/A, Alexandria Park, 1, Penner Road, Havant, Hampshire, PO9 1QY Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	82	-	471006 105469

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
392	**Contemporary Trade Directory Entries** Name: Furuno Uk Ltd Location: Unit 2/F, Alexandria Park, 1, Penner Road, Havant, Hampshire, PO9 1QY Classification: Marine Electrical Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A10SE (S)	89	-	471178 105403
393	**Contemporary Trade Directory Entries** Name: Lewmar Location: Southmoor Lane, Havant, PO9 1JJ Classification: Marine Equipment & Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A10NW (W)	93	-	470985 105767
393	**Contemporary Trade Directory Entries** Name: Lewmar Marine Ltd Location: Southmoor Lane, Havant, Hampshire, PO9 1JJ Classification: Marine Engineering Equipment Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	93	-	470985 105767
394	**Contemporary Trade Directory Entries** Name: Ses Slidel Engineering Services Location: Unit A/7, Cairo Place, 7, Penner Road, Havant, Hampshire, PO9 1QN Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A11SW (S)	101	-	471405 105391
395	**Contemporary Trade Directory Entries** Name: Robin Sparshatt & Associates Ltd Location: 10, Solent Road, Havant, Hampshire, PO9 1JH Classification: Commercial Vehicle Bodybuilders & Repairers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	109	-	471134 106033
395	**Contemporary Trade Directory Entries** Name: Allport Packaging Ltd Location: 2-8, Solent Road, Havant, Hampshire, PO9 1JH Classification: Case Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (NW)	126	-	471094 106042
396	**Contemporary Trade Directory Entries** Name: Blackberry Orthopaedic Clinic - Havant Location: Block 100 3rd Floor Langstone Gate,Solent Road, Havant, Hampshire, PO9 1TR Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NW (NE)	115	-	471552 105962
397	**Contemporary Trade Directory Entries** Name: Koolshade Ltd Location: Penner Rd, Havant, Hampshire, PO9 1QZ Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SE (S)	116	-	471290 105372
398	**Contemporary Trade Directory Entries** Name: Transfreight Express Ltd Location: Unit 5,Penner Rd, Havant, Hampshire, PO9 1QY Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SE (S)	118	-	471230 105372
398	**Contemporary Trade Directory Entries** Name: Box Shop Euro Ltd Location: 3,Pyramid Park,3 Penner Rd, Havant, Hampshire, PO9 1QZ Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SE (S)	118	-	471227 105372
399	**Contemporary Trade Directory Entries** Name: A & J Bull Location: Southmoor La, Havant, Hampshire, PO9 1JW Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10SW (SW)	121	-	470960 105506

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
400	**Contemporary Trade Directory Entries** Name: Just Tyres Location: Solent Road, Havant, Hampshire, PO9 1JH Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (N)	131	-	471253 106039
401	**Contemporary Trade Directory Entries** Name: Tesco Filling Station Location: Solent Road, Havant, PO9 1TR Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NW (N)	133	-	471408 106011
402	**Contemporary Trade Directory Entries** Name: Carillion Location: Unit 1/A, Alexandria Park, 1, Penner Road, Havant, Hampshire, PO9 1QY Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	136	-	470994 105390
402	**Contemporary Trade Directory Entries** Name: C I S Location: Unit 1a, Alexandria Park, 1, Penner Road, Havant, PO9 1QY Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	136	-	470993 105390
402	**Contemporary Trade Directory Entries** Name: C I S Location: Unit 1a, Alexandria Park, 1, Penner Road, Havant, PO9 1QY Classification: Engineering Materials **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (SW)	136	-	470993 105390
403	**Contemporary Trade Directory Entries** Name: Hilton Engineering Location: 6 Solent Rd, Havant, Hampshire, PO9 1JH Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SE (NW)	143	-	471060 106044
403	**Contemporary Trade Directory Entries** Name: T & C Precision Location: 4, Solent Road, HAVANT, Hampshire, PO9 1JH Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	157	-	471025 106033
403	**Contemporary Trade Directory Entries** Name: Halfords Autocentre Location: Unit 3 Solent Trade Park,Solent Road, Havant, Hampshire, PO9 1JH Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A10NE (NW)	159	-	471025 106036
403	**Contemporary Trade Directory Entries** Name: E M P Tooling Location: 4, Solent Road, Havant, Hampshire, PO9 1JH Classification: Tool Design, Manufacturers & Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A10NE (NW)	163	-	471023 106040
404	**Contemporary Trade Directory Entries** Name: Seward Accident Repair Centres Ltd Location: Langstone House, Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A10SW (W)	155	-	470927 105589
404	**Contemporary Trade Directory Entries** Name: Southmoore Screen Printing Location: Southmoor Lane, Havant, Hampshire, PO9 1JW Classification: Screen Process Printers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A10SW (W)	155	-	470927 105589
405	**Contemporary Trade Directory Entries** Name: S S E Location: 4, Penner Road, Havant, Hampshire, PO9 1QH Classification: Electricity Companies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NE (S)	170	-	471260 105319

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
405	**Contemporary Trade Directory Entries** Name: Autoliv Ltd Location: Penner Road, Havant, Hampshire, PO9 1QH Classification: Car Component Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NE (S)	170	-	471260 105319
405	**Contemporary Trade Directory Entries** Name: S S E Water Location: 4, Penner Road, Havant, PO9 1QH Classification: Electrical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A6NE (S)	194	-	471250 105296
406	**Contemporary Trade Directory Entries** Name: Motomex Location: Unit 2, 25e, Brockhampton Lane, Havant, Hampshire, PO9 1JT Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (N)	187	-	471250 106096
406	**Contemporary Trade Directory Entries** Name: Motomex Location: Unit 2, 25c, Brockhampton Lane, Havant, Hampshire, PO9 1JT Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (N)	207	-	471273 106113
406	**Contemporary Trade Directory Entries** Name: Lefay Engineering Ltd Location: Unit 3, 25c, Brockhampton Lane, Havant, Hampshire, PO9 1JT Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (N)	207	-	471296 106109
406	**Contemporary Trade Directory Entries** Name: Solent Cleaners Location: 15, Solent Road, HAVANT, Hampshire, PO9 1AF Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (N)	207	-	471296 106109
407	**Contemporary Trade Directory Entries** Name: M M P Electrovibe Uk Ltd Location: Brockhampton Road, HAVANT, Hampshire, PO9 1JU Classification: Metal Finishing Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	194	-	470869 105882
407	**Contemporary Trade Directory Entries** Name: Northshore Composites Ltd Location: Brockhampton Road, Havant, Hampshire, PO9 1JU Classification: Boatbuilders & Repairers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	194	-	470869 105882
407	**Contemporary Trade Directory Entries** Name: Drive In Mot Ltd Location: Brockhampton Road, Havant, Hampshire, PO9 1JU Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	208	-	470864 105918
407	**Contemporary Trade Directory Entries** Name: Premier Sheet Metal & Engineering Co Ltd Location: Brockhampton Road, Havant, Hampshire, PO9 1JU Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	208	-	470864 105918
407	**Contemporary Trade Directory Entries** Name: Advanced Coating Technology Ltd Location: Brockhampton Rd, Havant, Hampshire, PO9 1JU Classification: Metal Finishing Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10NW (NW)	223	-	470841 105888
408	**Contemporary Trade Directory Entries** Name: Jewson Location: 2, Solent Road, Havant, PO9 1JH Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	197	-	470960 106017

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
409	**Contemporary Trade Directory Entries** Name: Visitech Location: Solent Rd, Havant, Hampshire, PO9 1TR Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A15SW (N)	201	-	471434 106075
410	**Contemporary Trade Directory Entries** Name: Advanced Coating Technology Ltd Location: Brockhampton Road, Havant, Hampshire, PO9 1JU Classification: Metal Finishing Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (NW)	223	-	470866 105958
411	**Contemporary Trade Directory Entries** Name: Crown Press Location: 14, Havant Business Centre, Harts Farm Way, Havant, Hampshire, PO9 1HU Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A10NW (W)	228	-	470834 105811
411	**Contemporary Trade Directory Entries** Name: E C Tooling Systems Ltd Location: 1, Havant Business Centre, Harts Farm Way, Havant, Hampshire, PO9 1HU Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	271	-	470791 105815
411	**Contemporary Trade Directory Entries** Name: Oberon Engineering Ltd Location: 6, Havant Business Centre, Harts Farm Way, Havant, Hampshire, PO9 1HU Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	271	-	470791 105815
411	**Contemporary Trade Directory Entries** Name: Fleet Repair Centre Location: 9-10, Havant Business Centre, Harts Farm Way, Havant, Hampshire, PO9 1HU Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	271	-	470791 105815
411	**Contemporary Trade Directory Entries** Name: Tal Uk Location: 8, Havant Business Centre, Harts Farm Way, Havant, Hampshire, PO9 1HU Classification: Lighting Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A10NW (W)	271	-	470791 105815
411	**Contemporary Trade Directory Entries** Name: Lynx Garage Location: 2, Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	271	-	470791 105815
411	**Contemporary Trade Directory Entries** Name: G J Winter International Location: Harts Farm Way Depot, Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10NW (W)	293	-	470772 105781
412	**Contemporary Trade Directory Entries** Name: Allied National Group Location: Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Pallets, Crates & Packing Cases **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A6NW (SW)	238	-	470890 105356
412	**Contemporary Trade Directory Entries** Name: Allied Pallets Location: Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Pallets, Crates & Packing Cases **Status: Active** Positional Accuracy: Manually positioned to the address or location	A6NW (SW)	238	-	470890 105356

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
413	**Contemporary Trade Directory Entries** Name: Burrows Bros Engineering Ltd Location: Selbourne Road, Havant, Hampshire, PO9 1ND Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	243	-	471411 106123
414	**Contemporary Trade Directory Entries** Name: Acacia Window Blinds Direct Location: 8, Longmead Gardens, Havant, Hampshire, PO9 1RR Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (SE)	274	-	471698 105426
415	**Contemporary Trade Directory Entries** Name: Coopers Blinds Ltd Location: 18, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (N)	281	-	471233 106194
416	**Contemporary Trade Directory Entries** Name: Hourglass Uk Ltd Location: 14, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Glass Products - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (N)	282	-	471291 106186
416	**Contemporary Trade Directory Entries** Name: Navitron Systems Ltd Location: 17, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Electronic Equipment - Manufacturers & Assemblers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (N)	282	-	471246 106193
416	**Contemporary Trade Directory Entries** Name: Inovolt Ltd Location: Unit 15 The Tanneries,Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Mechanical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (N)	323	-	471312 106224
417	**Contemporary Trade Directory Entries** Name: Hsp Plastics Plc Location: Unit C, Kingscroft Court, Ridgway, Havant, Hampshire, PO9 1LS Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	287	-	470859 106052
417	**Contemporary Trade Directory Entries** Name: Hsp Plastics Plc Location: Unit C, Kingscroft Court, Ridgway, Havant, Hampshire, PO9 1LS Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	287	-	470859 106052
417	**Contemporary Trade Directory Entries** Name: Macvere Engineering Ltd Location: Unit 2-3, Kingscroft Court, Ridgway, Havant, Hampshire, PO9 1LS Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	293	-	470866 106067
418	**Contemporary Trade Directory Entries** Name: Plastic Engineering Solutions Location: 23, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	294	-	471344 106188
418	**Contemporary Trade Directory Entries** Name: Oden Services (Uk) Ltd Location: Unit 23 Brockhampton La, Havant, Hampshire, PO9 1JB Classification: Computer Recycling & Disposal **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	297	-	471343 106192
418	**Contemporary Trade Directory Entries** Name: P D L Technologies Ltd Location: 13, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Spraying - Paint & Coatings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	304	-	471357 106196

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
418	**Contemporary Trade Directory Entries** Name: A C Redman Metal Spinnings Location: 13, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Metal Spinners **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	304	-	471356 106196
419	**Contemporary Trade Directory Entries** Name: P & I Generators Ltd Location: Unit 1, Hermitage Park, Harts Farm Way, Havant, PO9 1FA Classification: Generators - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A10NW (W)	295	-	470766 105872
420	**Contemporary Trade Directory Entries** Name: Acorn Engineering Havant Ltd Location: Unit 6, Kingscroft Court, Ridgway, Havant, PO9 1LS Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	315	-	470816 106047
420	**Contemporary Trade Directory Entries** Name: Target Precision Engineering Ltd Location: Unit F, Kingscroft Court, Ridgway, Havant, Hampshire, PO9 1LS Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	315	-	470816 106047
420	**Contemporary Trade Directory Entries** Name: Acorn Engineering Location: Unit G, Kingscroft Court, Ridgway, Havant, Hampshire, PO9 1LS Classification: Machinery - Industrial & Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	325	-	470806 106051
420	**Contemporary Trade Directory Entries** Name: H P S Printing Ltd Location: 7 Kingscroft Ct,Ridgway, Havant, Hampshire, PO9 1LS Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (NW)	325	-	470806 106050
420	**Contemporary Trade Directory Entries** Name: Mdp Location: 7,Kingscroft Ct,Ridgway, Havant, Hampshire, PO9 1LS Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (NW)	325	-	470806 106050
420	**Contemporary Trade Directory Entries** Name: Rowan Business Equipment Location: 8 Kingscroft Ct,Ridgway, Havant, Hampshire, PO9 1LS Classification: Photocopiers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (NW)	338	-	470796 106059
421	**Contemporary Trade Directory Entries** Name: Pesd (Engineering) Ltd Location: 20, South Street, Havant, Hampshire, PO9 1DA Classification: Engineers - General **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SE (NE)	317	-	471754 106064
422	**Contemporary Trade Directory Entries** Name: Spectrum Work Place Location: 2, Marples Way, Havant, PO9 1UH Classification: Office Furniture & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	320	-	470888 106123
422	**Contemporary Trade Directory Entries** Name: Spectrum Work Place Location: 2, Marples Way, Havant, Hampshire, PO9 1UH Classification: Office Furniture & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	320	-	470888 106123
423	**Contemporary Trade Directory Entries** Name: The Havant Brewery Location: Unit 25, The Tanneries, Brockhampton Lane, Havant, PO9 1JB Classification: Brewers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	333	-	471365 106224

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
423	**Contemporary Trade Directory Entries** Name: Spindex Tools Location: 7, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Tool Design, Manufacturers & Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: The Havant Brewery Location: 25 The Tanneries, Havant, Hampshire, Po9 1jb Classification: Brewers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Picture Perfect Location: Unit 9, Havant, Hampshire, PO9 1JB Classification: Picture & Picture Frame Renovating & Restoring **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Wells Timber Products Location: 22, The Tanneries, Brockhampton Lane, Havant, PO9 1JB Classification: Garden & Patio Furniture Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Gembrite Ltd Location: 3, The Tanneries, Brockhampton Lane, Havant, PO9 1JB Classification: Catering Equipment - Servicing & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Iain'S Auto Services Location: 20, The Tanneries, Brockhampton Lane, Havant, PO9 1JB Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: A C E Location: 7, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: R S Vehicle Repair & Roys Rovers Location: 20, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Dip & Strip Location: 27-28, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Paint & Varnish Stripping **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Tanneries Trade Location: 27-28, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	340	-	471377 106229
423	**Contemporary Trade Directory Entries** Name: Bodyguard Location: 27-28, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Car Body Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	346	-	471339 106242
423	**Contemporary Trade Directory Entries** Name: A B S Metal Finishers Ltd Location: 2, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Metal Finishing Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	358	-	471358 106251

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
423	**Contemporary Trade Directory Entries** Name: G & W Motors Location: 2-3, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	358	-	471358 106251
423	**Contemporary Trade Directory Entries** Name: Smith Bros Flight Cases Location: 22, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Case Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	358	-	471358 106251
423	**Contemporary Trade Directory Entries** Name: E-Tech Motorsport Ltd Location: 4, The Tanneries, Brockhampton Lane, Havant, PO9 1JB Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	382	-	471403 106266
423	**Contemporary Trade Directory Entries** Name: Iso Engineering Electrical Services Ltd Location: 4, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Control Panel Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	382	-	471403 106266
423	**Contemporary Trade Directory Entries** Name: Iso Engineering Electrical Services Location: 4, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Control Panel Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	382	-	471403 106266
423	**Contemporary Trade Directory Entries** Name: E-Tech Independent B M W Specialist Location: 4, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	382	-	471403 106266
424	**Contemporary Trade Directory Entries** Name: Lemac Autos Ltd Location: 12-12a, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	341	-	471403 106224
424	**Contemporary Trade Directory Entries** Name: H & R Fabrications & Finishers Ltd Location: 12-12a, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	341	-	471403 106224
424	**Contemporary Trade Directory Entries** Name: Able Motor Co Ltd Location: 12-12a, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	341	-	471403 106224
424	**Contemporary Trade Directory Entries** Name: Metalcraft Fabrications Location: 29, The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB Classification: Metal Products - Fabricated **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	380	-	471423 106260
425	**Contemporary Trade Directory Entries** Name: Veolia Environmental Services Location: Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A10NW (W)	346	-	470714 105832
426	**Contemporary Trade Directory Entries** Name: Shell (Uk) Ltd Location: 5, Park Road South, Havant, Hampshire, PO9 1HA Classification: Petrol Filling Stations - 24 Hour **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (NE)	351	-	471590 106196

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
427	**Contemporary Trade Directory Entries** Name: Deep Sea Seals Location: 4, Marples Way, Havant, Hampshire, PO9 1NX Classification: Marine Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	369	-	470837 106142
427	**Contemporary Trade Directory Entries** Name: Deep Sea Seals Ltd Location: 4, Marples Way, Havant, Hampshire, PO9 1NX Classification: Marine Equipment & Supplies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	414	-	470815 106182
427	**Contemporary Trade Directory Entries** Name: John Crane Location: 4, Marples Way, Havant, Hampshire, PO9 1NX Classification: Marine Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	414	-	470815 106182
428	**Contemporary Trade Directory Entries** Name: Tyres & Auto Location: 3a, Brockhampton Lane, Havant, PO9 1LU Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	373	-	471497 106238
428	**Contemporary Trade Directory Entries** Name: C J H Tyres Havant Location: 3a, Brockhampton Lane, Havant, Hampshire, PO9 1LU Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	373	-	471497 106238
428	**Contemporary Trade Directory Entries** Name: The 10th March Group Ltd Location: 3a, Brockhampton Lane, Havant, Hampshire, PO9 1LU Classification: Brake & Clutch Service Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	373	-	471497 106238
428	**Contemporary Trade Directory Entries** Name: C J H Location: 3, Brockhampton Lane, Havant, PO9 1LU Classification: Brake & Clutch Service Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	390	-	471497 106255
428	**Contemporary Trade Directory Entries** Name: Mercury Graphics Ltd Location: 1a, Brockhampton Lane, Havant, Hampshire, PO9 1LU Classification: Copying & Duplicating Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	408	-	471509 106272
428	**Contemporary Trade Directory Entries** Name: Printline Location: 1a, Brockhampton Lane, Havant, Hampshire, PO9 1LU Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	408	-	471509 106272
429	**Contemporary Trade Directory Entries** Name: Havant Plant Hire Ltd Location: Spring Plot Brockhampton Road, Havant, Hampshire, PO9 1NU Classification: Plant & Machinery Repairs **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14SE (NW)	374	-	471005 106274
429	**Contemporary Trade Directory Entries** Name: Havant Drive In M O T Services Location: 3, Kingscroft Corner, Havant, PO9 1NW Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	380	-	470966 106263
430	**Contemporary Trade Directory Entries** Name: Livewire Location: Hall Place Cottage, South Street, Havant, PO9 1DA Classification: Tyre Repairs & Retreading **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	379	-	471772 106134

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
430	**Contemporary Trade Directory Entries** Name: Havant Garage Location: 25-27, South Street, Havant, Hampshire, PO9 1BU Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	386	-	471802 106115
430	**Contemporary Trade Directory Entries** Name: Dave Crews Location: 25-27, South Street, Havant, Hampshire, PO9 1BU Classification: Car Painters & Sprayers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	386	-	471802 106115
430	**Contemporary Trade Directory Entries** Name: Havant Garages Location: 25-27, South Street, Havant, Hampshire, PO9 1BU Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	386	-	471802 106115
430	**Contemporary Trade Directory Entries** Name: Havant Garage Location: 25-27, South Street, Havant, Hampshire, PO9 1BU Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	386	-	471802 106115
430	**Contemporary Trade Directory Entries** Name: All About Gas Heating & Plumbing Services Ltd Location: 25a, South Street, Havant, Hampshire, PO9 1BU Classification: Boilers - Servicing, Replacements & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	395	-	471800 106130
430	**Contemporary Trade Directory Entries** Name: Price'S Garage Location: 23, South Street, Havant, Hampshire, PO9 1BU Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	401	-	471795 106144
431	**Contemporary Trade Directory Entries** Name: S M S Tyres Location: 2, Ridgway, Havant, PO9 1QJ Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	403	-	470770 106128
431	**Contemporary Trade Directory Entries** Name: Solent Motor Services Location: 2, Ridgway, Havant, PO9 1QJ Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	403	-	470770 106128
431	**Contemporary Trade Directory Entries** Name: Kingscroft Cars Location: 2, Ridgway, Havant, Hampshire, PO9 1QJ Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	403	-	470770 106128
432	**Contemporary Trade Directory Entries** Name: Bath Renovation & Management Services Location: Homewell House, 22, Homewell, Havant, Hampshire, PO9 1EE Classification: Bath Resurfacing **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SE (NE)	403	-	471732 106194
433	**Contemporary Trade Directory Entries** Name: Ers Engineering Services Location: 8-12, Park Road South, Havant, Hampshire, PO9 1HB Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (NE)	403	-	471546 106259
433	**Contemporary Trade Directory Entries** Name: Rokill Location: Rossland House,West St, Havant, Hampshire, PO9 1LA Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A15SW (N)	421	-	471523 106282

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
433	**Contemporary Trade Directory Entries** Name: Next Floor Ltd Location: 43, West Street, Havant, PO9 1LA Classification: Carpets & Rugs - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (N)	422	-	471532 106281
434	**Contemporary Trade Directory Entries** Name: Supasnaps Location: 29, West Street, Havant, Hampshire, PO9 1ER Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (NE)	425	-	471597 106270
435	**Contemporary Trade Directory Entries** Name: Henry Jones Joinery Ltd Location: 59-61, West Street, Havant, Hampshire, PO9 1LA Classification: Joinery Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	430	-	471435 106309
435	**Contemporary Trade Directory Entries** Name: Alandown Motors Ltd Location: 98, West Street, Havant, PO9 1LN Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A15SW (N)	456	-	471435 106336
435	**Contemporary Trade Directory Entries** Name: Lawrence Warner Specialist Cars Ltd Location: 98, West Street, Havant, Hampshire, PO9 1LN Classification: Car Dealers - Used **Status: Active** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	456	-	471435 106336
435	**Contemporary Trade Directory Entries** Name: Havant Car Connection Location: 98, West Street, Havant, Hampshire, PO9 1LN Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SW (N)	457	-	471435 106336
436	**Contemporary Trade Directory Entries** Name: Mototalk Garage Services Location: Unit 13 Rear of South Street, Havant, Hampshire, PO9 1BU Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A15SE (NE)	437	-	471815 106174
436	**Contemporary Trade Directory Entries** Name: Mechanerics Location: 15c, South Street, Havant, PO9 1BU Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	437	-	471815 106174
436	**Contemporary Trade Directory Entries** Name: Pearce Motors (Havant) Ltd Location: 13-15, South Street, Havant, Hampshire, PO9 1BU Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	438	-	471819 106172
436	**Contemporary Trade Directory Entries** Name: Pearce Motors Location: 13-15, South Street, Havant, Hampshire, PO9 1BU Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	438	-	471819 106172
437	**Contemporary Trade Directory Entries** Name: Motatalk Garage Services Location: 13 South St, Havant, Hampshire, PO9 1BU Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15SE (NE)	440	-	471804 106188
437	**Contemporary Trade Directory Entries** Name: Animal Fayre Location: 8, East Street, Havant, Hampshire, PO9 1AQ Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	487	-	471826 106230

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
437	**Contemporary Trade Directory Entries** Name: Complete Lighting Services Ltd Location: East Street, Havant, Hampshire, PO9 1AA Classification: Lighting Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	514	-	471835 106257
437	**Contemporary Trade Directory Entries** Name: Street'S Location: 11, East Street, Havant, Hampshire, PO9 1AB Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	520	-	471847 106256
438	**Contemporary Trade Directory Entries** Name: Solent Cleaners Ltd Location: 34, West Street, Havant, Hampshire, PO9 1PG Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SW (NE)	470	-	471650 106304
439	**Contemporary Trade Directory Entries** Name: Currys Location: 6, West Street, Havant, Hampshire, PO9 1PF Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	492	-	471765 106278
440	**Contemporary Trade Directory Entries** Name: Goodmans Loudspeakers Ltd Location: 1-3, Ridgway, Havant, Hampshire, PO9 1JS Classification: Sound Equipment Systems Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (NW)	519	-	470613 106111
440	**Contemporary Trade Directory Entries** Name: Mordaunt-Short Location: 1-3, Ridgway, Havant, Hampshire, PO9 1JS Classification: Sound Equipment Systems Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (NW)	519	-	470613 106111
440	**Contemporary Trade Directory Entries** Name: T G I Plc Location: 1-3, Ridgway, Havant, Hampshire, PO9 1JS Classification: Sound Equipment Systems Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (NW)	519	-	470613 106111
441	**Contemporary Trade Directory Entries** Name: Commercial Printers (Portsmouth) Ltd Location: 39, Park Way, Havant, Hampshire, PO9 1HH Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NW (N)	521	-	471427 106404
441	**Contemporary Trade Directory Entries** Name: Performance Car Co Location: 39, Park Way, Havant, Hampshire, PO9 1HH Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NW (N)	521	-	471427 106404
442	**Contemporary Trade Directory Entries** Name: Pharmstead Uk Ltd Location: Broadmarsh Business Park,Unit 53 Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Chemists' & Pharmacists' Suppliers & Wholesalers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9NE (W)	531	-	470538 105734
443	**Contemporary Trade Directory Entries** Name: Tarmac Location: Bedhampton Quay, Harts Farm Way, Havant, PO9 1JN Classification: Sand, Gravel & Other Aggregates **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SE (W)	545	-	470535 105640

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
443	**Contemporary Trade Directory Entries** Name: Tarmac Ltd Location: Bedhampton Quay, Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Sand, Gravel & Other Aggregates **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SE (W)	545	-	470535 105640
443	**Contemporary Trade Directory Entries** Name: Busymix Concrete Ltd Location: Bedhampton Quay, Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Concrete & Mortar Ready Mixed **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SE (W)	545	-	470535 105640
443	**Contemporary Trade Directory Entries** Name: T J Waste & Recycling Ltd Location: Harts Farm Way Depot, Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A9SE (W)	581	-	470499 105674
444	**Contemporary Trade Directory Entries** Name: Hopkins Recycling Ltd Location: Havant, Hampshire, Po9 1jn Classification: Recycling Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	545	-	470516 105814
445	**Contemporary Trade Directory Entries** Name: Oven Clean Direct Location: Town Hall Road, Havant, Hampshire, PO9 1AN Classification: Oven cleaning **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A15SE (NE)	546	-	471975 106153
445	**Contemporary Trade Directory Entries** Name: Pennington Ziggy Location: 2, Town Hall Road, Havant, Hampshire, PO9 1AN Classification: Electrolysis **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	567	-	471987 106171
446	**Contemporary Trade Directory Entries** Name: 5 Star Units Location: The Pallant, Havant, Hampshire, PO9 1BE Classification: Gearboxes **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A15SE (NE)	559	-	471826 106319
446	**Contemporary Trade Directory Entries** Name: Five Star Units Location: The Pallant, Havant, Hampshire, PO9 1BE Classification: Engine Rebuilding & Reconditioning **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A15SE (NE)	570	-	471842 106322
447	**Contemporary Trade Directory Entries** Name: Robert Dyas Ltd Location: 8-10, Meridian Centre, Havant, Hampshire, PO9 1UW Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	561	-	471754 106361
447	**Contemporary Trade Directory Entries** Name: Wilkinson Hardware Store Location: 23, Meridian Centre, HAVANT, Hampshire, PO9 1UW Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	561	-	471754 106361
448	**Contemporary Trade Directory Entries** Name: The Dust Dolly Location: 23, Boundary Way, Havant, Hampshire, PO9 1NE Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (N)	585	-	471285 106493

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
449	**Contemporary Trade Directory Entries** Name: Supply Team Location: 52, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Pharmaceutical Manufacturers & Distributors **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	599	-	470466 105773
449	**Contemporary Trade Directory Entries** Name: Lewis Mobility Location: 51, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Disability Equipment - Manufacturers & Suppliers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	601	-	470462 105778
449	**Contemporary Trade Directory Entries** Name: The Windowmakers Location: 51 Basepoint, Broadmarsh Business Centre, Havant, Hampshire, PO9 1HS Classification: Window Frame Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	605	-	470459 105777
449	**Contemporary Trade Directory Entries** Name: Havant Salvage Location: 4, Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Classification: Scrap Metal Merchants **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	607	-	470460 105743
449	**Contemporary Trade Directory Entries** Name: Raft Systems Ltd Location: 49, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Classification: Telecommunications Equipment & Systems **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A9NE (W)	610	-	470453 105788
449	**Contemporary Trade Directory Entries** Name: Fairview Lifting Gear Services Location: 47, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Lifting Equipment **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	613	-	470449 105799
449	**Contemporary Trade Directory Entries** Name: Draper Uk Crane Hire Ltd Location: Unit 44 Broadmarsh Business & Innovation Centre,Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Crane Hire, Sales & Service **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	632	-	470429 105811
450	**Contemporary Trade Directory Entries** Name: Printworks The Location: 37, East Street, Havant, Hampshire, PO9 1AA Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	600	-	471992 106222
451	**Contemporary Trade Directory Entries** Name: A R C Location: West Street, Havant, Hampshire, PO9 1LR Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14NW (NW)	605	-	470943 106497
452	**Contemporary Trade Directory Entries** Name: Park Way Centre Location: Park Way, Havant, Hampshire, PO9 1HH Classification: Hospitals **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A15NW (N)	615	-	471466 106492
453	**Contemporary Trade Directory Entries** Name: Fire Systems Direct Ltd Location: 25, Wade Court Road, Havant, PO9 2SU Classification: Firefighting Equipment **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A12NW (E)	642	-	472237 105780

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
454	**Contemporary Trade Directory Entries** Name: Service Master Location: 26, Lymbourn Road, Havant, Hampshire, PO9 2SL Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16SW (NE)	642	-	472129 106066
455	**Contemporary Trade Directory Entries** Name: C4 Location: 42-43, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	645	-	470417 105807
455	**Contemporary Trade Directory Entries** Name: Select Freight Ltd Location: 42, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Freight Forwarders **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	645	-	470417 105807
455	**Contemporary Trade Directory Entries** Name: Portsmouth A C Ltd Location: 39, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	663	-	470399 105798
456	**Contemporary Trade Directory Entries** Name: Maids Location: 37, North Street, Havant, Hampshire, PO9 1PP Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	651	-	471793 106442
457	**Contemporary Trade Directory Entries** Name: Kemp Brothers Location: 9, Cross Way, Havant, Hampshire, PO9 1NG Classification: Joinery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (N)	655	-	471182 106578
458	**Contemporary Trade Directory Entries** Name: E-Vapes Location: 18, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Classification: Electronic Equipment - Manufacturers & Assemblers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (W)	657	-	470409 105750
458	**Contemporary Trade Directory Entries** Name: The Windowmakers Location: 51 Basepoint,Broadmarsh Business Centre, Havant, Hampshire, PO9 1HS Classification: Window Frame Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	664	-	470402 105748
458	**Contemporary Trade Directory Entries** Name: Tt Coil Ltd Location: 18, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Heat Exchangers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (W)	664	-	470402 105748
458	**Contemporary Trade Directory Entries** Name: 2 Teck Ltd Location: 19, Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, Hampshire, PO9 1HS Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (W)	664	-	470402 105748
459	**Contemporary Trade Directory Entries** Name: Hanson Ready-Mixed Concrete Location: Harts Farm Way, Havant, Hampshire, PO9 1JN Classification: Concrete & Mortar Ready Mixed **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A9SE (W)	658	-	470421 105670

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
460	**Contemporary Trade Directory Entries** Name: F O'Reilly & Son Location: 7, Market Parade, Havant, Hampshire, PO9 1PY Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	664	-	471720 106485
461	**Contemporary Trade Directory Entries** Name: Premier Pallet Supplies Ltd Location: Palk Road, Havant, Hampshire, PO9 1NL Classification: Pallets, Crates & Packing Cases **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	665	-	470760 106471
461	**Contemporary Trade Directory Entries** Name: Premier Pallet Supplies Location: Palk Road, HAVANT, Hampshire, PO9 1NL Classification: Pallets, Crates & Packing Cases **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	665	-	470760 106471
462	**Contemporary Trade Directory Entries** Name: Seward Group Ltd Location: West Street, Havant, Hampshire, PO9 1LT Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	667	-	470877 106538
462	**Contemporary Trade Directory Entries** Name: Accident Repair Centre Location: West Street, Havant, Hampshire, PO9 1LR Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	702	-	470837 106558
462	**Contemporary Trade Directory Entries** Name: Accident Repair Centre Havant Location: West Street, Havant, PO9 1LR Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	702	-	470837 106558
463	**Contemporary Trade Directory Entries** Name: John Davidson Ltd Location: Palk Rd, Havant, Hampshire, PO9 1NL Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NW)	672	-	470808 106510
463	**Contemporary Trade Directory Entries** Name: Flyght Travel Location: Palk Rd, Havant, Hampshire, PO9 1NL Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NW)	673	-	470814 106514
464	**Contemporary Trade Directory Entries** Name: Havant & Emsworth Laundrette Location: 34, Market Parade, HAVANT, Hampshire, PO9 1QF Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	690	-	471779 106491
464	**Contemporary Trade Directory Entries** Name: Havant & Emsworth Launderette Location: 34, Market Parade, Havant, Hampshire, PO9 1QF Classification: Laundries & Launderettes **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	690	-	471779 106491
464	**Contemporary Trade Directory Entries** Name: Ace Electrics Location: 38, Market Parade, Havant, Hampshire, PO9 1QF Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	694	-	471789 106491
465	**Contemporary Trade Directory Entries** Name: Wickes Location: 12, Park Way, Havant, PO9 1HH Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NW (N)	695	-	471459 106574

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
466	**Contemporary Trade Directory Entries** Name: Havant War Memorial Hospital Location: 59, Cross Way, Havant, Hampshire, PO9 1NG Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NW (N)	720	-	471371 106616
467	**Contemporary Trade Directory Entries** Name: Blazes Fireplace Centres Location: 23-25, Market Parade, Havant, Hampshire, PO9 1PY Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	720	-	471742 106537
467	**Contemporary Trade Directory Entries** Name: Ace Electrics Location: 35-37, Market Parade, Havant, Hampshire, PO9 1PY Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NE (NE)	748	-	471779 106553
468	**Contemporary Trade Directory Entries** Name: S Restall Location: 10, New Road, Havant, Hampshire, PO9 1DE Classification: Stained Glass Designers & Producers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NW)	744	-	470874 106619
468	**Contemporary Trade Directory Entries** Name: Rapid Fit Location: New Rd, Havant, Hampshire, PO9 1DE Classification: Exhaust & Shock Absorber Centres **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NW)	775	-	470884 106656
469	**Contemporary Trade Directory Entries** Name: Sam Hartley Location: 6, Elm Road, Havant, Hampshire, PO9 2SZ Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (E)	744	-	472326 105865
470	**Contemporary Trade Directory Entries** Name: Complete Commercials Location: New Rd, Havant, Hampshire, PO9 1DE Classification: Commercial Vehicle Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A18SW (N)	818	-	470964 106723
471	**Contemporary Trade Directory Entries** Name: The Starjammer Group Location: 2, Steyning Terrace, Waterloo Road, Havant, Hampshire, PO9 1BJ Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (NE)	820	-	471955 106547
471	**Contemporary Trade Directory Entries** Name: Pub & Restaurant Supplies Location: Waterloo Rd, Havant, Hampshire, PO9 1BH Classification: Janitorial Equipment - Servicing & Repairs **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A15NE (NE)	824	-	471982 106534
472	**Contemporary Trade Directory Entries** Name: Telegraphica Design & Print Location: 29, Elmleigh Road, Havant, Hampshire, PO9 2AA Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15NE (N)	826	-	471688 106661
473	**Contemporary Trade Directory Entries** Name: Kwik Fit Location: New Road, Havant, Hampshire, PO9 1DE Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	839	-	471137 106764
473	**Contemporary Trade Directory Entries** Name: Kwik-Fit Location: New Road, Havant, Hampshire, PO9 1DE Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	839	-	471137 106764

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
474	**Contemporary Trade Directory Entries** Name: Cambridge Garage Location: 23, Bedhampton Road, Havant, Hampshire, PO9 3ES Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	878	-	470568 106592
474	**Contemporary Trade Directory Entries** Name: Cambridge Garage Volvo Location: 23, Bedhampton Road, Havant, Hampshire, PO9 3ES Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	878	-	470568 106592
474	**Contemporary Trade Directory Entries** Name: Cambridge Garage Ltd Location: 23, Bedhampton Road, Havant, Hampshire, PO9 3ES Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	878	-	470568 106592
474	**Contemporary Trade Directory Entries** Name: National Tyres & Autocare Location: 27, Bedhampton Road, HAVANT, Hampshire, PO9 3ES Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	903	-	470542 106602
475	**Contemporary Trade Directory Entries** Name: Ats Euromaster Ltd Location: 60-62, Bedhampton Road, Havant, Hampshire, PO9 3EY Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	926	-	470552 106641
476	**Contemporary Trade Directory Entries** Name: Total Scaffolding Supplies Location: 8, New Lane, Havant, PO9 2JH Classification: Scaffolding & Work Platforms **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16NW (NE)	947	-	472103 106598
476	**Contemporary Trade Directory Entries** Name: Wessex Building Supplies Location: 8, New Lane, Havant, Hampshire, PO9 2JH Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16NW (NE)	947	-	472103 106598
476	**Contemporary Trade Directory Entries** Name: A1 Recovery Location: 8, New Lane, Havant, Hampshire, PO9 2JH Classification: Car Breakdown & Reccvery Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A16NW (NE)	968	-	472114 106616
476	**Contemporary Trade Directory Entries** Name: A1 Garage Services Location: 8, New Lane, Havant, Hampshire, PO9 2JH Classification: Breakdown and Recovery **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16NW (NE)	968	-	472114 106616
477	**Fuel Station Entries** Name: Havant Lorry Park Location: Southmoor Lane , , Havant, Hampshire, PO9 1JW Brand: Unbranded Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the road within the address or location	A10NW (W)	137	-	470946 105735
478	**Fuel Station Entries** Name: Tesco Havant Extra Location: Solent Road , , Havant, Hampshire, PO9 1TR Brand: Tesco Extra Premises Type: Hypermarket **Status: Open** Positional Accuracy: Manually positioned to the address or location	A14SE (N)	141	-	471280 106044

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
479	**Fuel Station Entries** Name: Park Road South Service Station Location: Park Road South Bulbeck Road, , Havant, Hampshire, PO9 1HA Brand: Texaco Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A15SW (NE)	351	-	471590 106196
480	**Fuel Station Entries** Name: Hendy Lennox Location: New Road , , Havant, Hampshire, PO9 1DE Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A18SE (N)	839	-	471136 106763
481	**Fuel Station Entries** Name: Cambridge Garage Location: 23, Bedhampton Road , , Havant, Hampshire, PO9 3ES Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A13NE (NW)	878	-	470568 106592
482	**Points of Interest - Commercial Services** Name: Seward Location: Langstone House, Southmoor Lane, Havant, PO9 1JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SE (SW)	55	7	471027 105531
482	**Points of Interest - Commercial Services** Name: Nationwide Seward Accident Repair Centres Havant Location: Langstone House, Southmoor Lane, Havant, PO9 1JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SE (SW)	56	7	471026 105531
482	**Points of Interest - Commercial Services** Name: Nationwide Seward Accident Repair Centre Location: Unit 1, Southmoor Lane, Havant, PO9 1JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SE (SW)	78	7	471004 105563
482	**Points of Interest - Commercial Services** Name: Mitchell & James Location: Southmoor Lane, Havant, PO9 1JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SE (SW)	78	7	471004 105563
482	**Points of Interest - Commercial Services** Name: Mitchell & James Location: Southmoor Lane, Havant, PO9 1JW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SE (SW)	78	7	471004 105563
483	**Points of Interest - Commercial Services** Name: Halfords Autocentre Location: Unit 3 Solent Trade Park, Solent Road, Havant, PO9 1JH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (N)	121	7	471157 106044
484	**Points of Interest - Commercial Services** Name: Tesco Havant Extra Location: Solent Road, Havant, PO9 1TR Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A14SE (N)	141	7	471280 106044
484	**Points of Interest - Commercial Services** Name: Car Wash Location: Solent Road, Havant, Hampshire, PO9 1TR Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A14SE (N)	141	7	471280 106044

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
484	**Points of Interest - Commercial Services** Name: Motomex Location: Unit 2 25e, Brockhampton Lane, Havant, PO9 1JT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (N)	187	7	471250 106096
484	**Points of Interest - Commercial Services** Name: Lynx Garage Location: Unit 5, 25c Brockhampton Lane, Havant, Hampshire, PO9 1JT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (N)	206	7	471296 106108
484	**Points of Interest - Commercial Services** Name: Motomex Location: 25a Brockhampton Lane, Havant, PO9 1JT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (N)	207	7	471296 106109
484	**Points of Interest - Commercial Services** Name: Motomex Garage Services Location: 25a Brockhampton Lane, Havant, PO9 1JT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SE (N)	207	7	471296 106109
485	**Points of Interest - Commercial Services** Name: Premier Sheet Metal & Engineering Co Ltd Location: Brockhampton Road, Havant, PO9 1JU Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A10NW (NW)	208	7	470864 105918
485	**Points of Interest - Commercial Services** Name: Premier Sheet Metal & Engineering Co Ltd Location: Brockhampton Road, Havant, PO9 1JU Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A10NW (NW)	208	7	470864 105918
486	**Points of Interest - Commercial Services** Name: Havant Vehicle Wash Location: Havant Lorry Park, Southmoor Lane, Havant, PO9 1JW Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A10NW (W)	215	7	470865 105733
487	**Points of Interest - Commercial Services** Name: Havant Salvage Location: 4 Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A10NW (W)	271	7	470791 105815
487	**Points of Interest - Commercial Services** Name: Lynx Garage Havant Location: 2 Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10NW (W)	271	7	470791 105815
487	**Points of Interest - Commercial Services** Name: Fleet Repair Centre Location: 9-10 Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10NW (W)	271	7	470791 105815
487	**Points of Interest - Commercial Services** Name: Lynx Garage Location: 2 Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10NW (W)	271	7	470791 105815
487	**Points of Interest - Commercial Services** Name: Fleet Repair Centre Location: 9-10 Havant Business Centre, Harts Farm Way, Havant, PO9 1HU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10NW (W)	271	7	470791 105815

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
487	**Points of Interest - Commercial Services** Name: Deesand M O T's & Tyres Location: Harts Farm Way, Havant, PO9 1JN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10NW (W)	351	7	470712 105802
488	**Points of Interest - Commercial Services** Name: Six O Location: Bosmere Building, School Road, Havant, PO9 1NA Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A15SW (N)	276	7	471468 106145
489	**Points of Interest - Commercial Services** Name: Oden Services UK Ltd Location: 23 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A15SW (N)	294	7	471344 106188
489	**Points of Interest - Commercial Services** Name: Iain's Auto Services Location: 20 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	339	7	471376 106228
489	**Points of Interest - Commercial Services** Name: Able Motor Co Ltd Location: 27-28 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	340	7	471377 106229
489	**Points of Interest - Commercial Services** Name: Iain's Auto Services Location: 20 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	340	7	471377 106229
489	**Points of Interest - Commercial Services** Name: R S Vehicle Repair & Roys Rovers Location: 20 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	340	7	471377 106229
489	**Points of Interest - Commercial Services** Name: Lemac Autos Ltd Location: 12-12a The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	341	7	471403 106224
489	**Points of Interest - Commercial Services** Name: Lemac Autos Location: 12-12a The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	341	7	471403 106224
489	**Points of Interest - Commercial Services** Name: Able Motor Co Location: 12-12a The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	341	7	471403 106224
489	**Points of Interest - Commercial Services** Name: Able Motor Company Ltd Location: 12-12a The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	341	7	471403 106224
489	**Points of Interest - Commercial Services** Name: Bodyguard Location: 27-28 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	346	7	471339 106242

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
489	**Points of Interest - Commercial Services** Name: G & W Motors Location: 2-3 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	358	7	471358 106251
489	**Points of Interest - Commercial Services** Name: E Tech Location: 4 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	382	7	471403 106266
489	**Points of Interest - Commercial Services** Name: E-tech Motorsport Ltd Location: 4 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	382	7	471402 106266
489	**Points of Interest - Commercial Services** Name: E-tech Motorsport Ltd Location: 4 The Tanneries, Brockhampton Lane, Havant, PO9 1JB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	382	7	471403 106266
490	**Points of Interest - Commercial Services** Name: Livewire Location: Hall Place Cottage, South Street, Havant, PO9 1DA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	378	7	471771 106134
490	**Points of Interest - Commercial Services** Name: Havant Garage Location: 25-27 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	385	7	471801 106114
490	**Points of Interest - Commercial Services** Name: Dave Crews Location: 25-27 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	386	7	471802 106115
490	**Points of Interest - Commercial Services** Name: Havant Garages Location: 25-27 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	386	7	471802 106115
490	**Points of Interest - Commercial Services** Name: Dave Crews Auto Sprays Location: 25-27 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	386	7	471802 106115
490	**Points of Interest - Commercial Services** Name: Price's Garage Location: 23 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	401	7	471795 106144
490	**Points of Interest - Commercial Services** Name: Pearce Motors Location: 15A South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	430	7	471801 106177
490	**Points of Interest - Commercial Services** Name: Pearce Motors Location: 15A South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	430	7	471801 106177

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
490	**Points of Interest - Commercial Services** Name: Pearce Motors Location: 13-15 South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	438	7	471819 106172
490	**Points of Interest - Commercial Services** Name: Mechanerics Location: 15c South Street, Havant, PO9 1BU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SE (NE)	454	7	471842 106171
491	**Points of Interest - Commercial Services** Name: Havant Drive in M O T Services Location: 3 Kingscroft Corner, Havant, PO9 1NW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (NW)	380	7	470966 106263
492	**Points of Interest - Commercial Services** Name: Solent Motor Services Ltd Location: 2 Ridgway, Havant, PO9 1QJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (NW)	403	7	470770 106128
492	**Points of Interest - Commercial Services** Name: Solent Motor Services Location: 2 Ridgway, Havant, PO9 1QJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (NW)	403	7	470770 106128
493	**Points of Interest - Commercial Services** Name: Alandown Motors Ltd Location: 98 West Street, Havant, PO9 1LN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	456	7	471435 106336
493	**Points of Interest - Commercial Services** Name: Alandown Motors Ltd Location: 98 West Street, Havant, PO9 1LN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A15SW (N)	456	7	471434 106335
494	**Points of Interest - Commercial Services** Name: Hopkins Recycling Ltd Location: Harts, Farm Way, Havant, PO9 1JN Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A9NE (W)	545	7	470516 105814
495	**Points of Interest - Commercial Services** Name: Select Freight Ltd Location: 42 Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A9NE (W)	645	7	470417 105807
495	**Points of Interest - Commercial Services** Name: Select Freight Ltd Location: 42-43 Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A9NE (W)	645	7	470417 105807
496	**Points of Interest - Commercial Services** Name: Vision Travel Ltd Location: Palk Road, Havant, PO9 1NL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NW)	652	7	470774 106465

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
497	**Points of Interest - Commercial Services** Name: Accident Repair Centre Location: West Street, Havant, PO9 1LR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NW)	702	7	470837 106558
497	**Points of Interest - Commercial Services** Name: A R C Location: West Street, Havant, PO9 1LR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NW)	702	7	470836 106558
497	**Points of Interest - Commercial Services** Name: Accident Repair Centre Havant Location: West Street, Havant, PO9 1LR Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NW)	702	7	470836 106558
498	**Points of Interest - Commercial Services** Name: Kwik-Fit (GB) Limited Location: New Road, Havant, PO9 1DE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (N)	839	7	471137 106764
498	**Points of Interest - Commercial Services** Name: Kwik-Fit (GB) Limited Location: New Road, Havant, PO9 1DE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (N)	839	7	471136 106763
499	**Points of Interest - Commercial Services** Name: Cambridge Garage Location: 23 Bedhampton Road, Havant, PO9 3ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (NW)	878	7	470568 106592
499	**Points of Interest - Commercial Services** Name: National Tyres and Autocare Location: 27 Bedhampton Road, Havant, PO9 3ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (NW)	903	7	470541 106601
499	**Points of Interest - Commercial Services** Name: National Tyres and Autocare Location: 27 Bedhampton Road, Havant, PO9 3ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (NW)	903	7	470542 106602
500	**Points of Interest - Commercial Services** Name: Air City Location: 12 Pine Grove, Havant, PO9 2RW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A16SW (NE)	897	7	472322 106252
501	**Points of Interest - Commercial Services** Name: Snack-In-The-Box Ltd Location: 3 Eastern Road, Havant, PO9 2JE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A15NE (NE)	973	7	472001 106697
502	**Points of Interest - Education and Health** Name: Havant War Memorial Hospital Location: 59 Cross Way, Havant, PO9 1NG Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A15NW (N)	720	7	471371 106616
502	**Points of Interest - Education and Health** Name: Havant War Memorial Hospital Location: 59 Cross Way, Havant, PO9 1NG Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A15NW (N)	720	7	471371 106616

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
503	**Points of Interest - Manufacturing and Production** Name: Fasset Location: Langstone Technology Park, Langstone Road, Havant, PO9 1SA Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A10NE (NE)	0	7	471327 105723
503	**Points of Interest - Manufacturing and Production** Name: Havant International Ltd Location: Langstone Technology Park 2b, Langstone Road, Havant, PO9 1SA Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A10NE (NE)	0	7	471327 105723
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A10SE (SW)	0	7	471097 105513
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A10SE (SW)	0	7	471097 105520
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A10SE (SW)	0	7	471099 105588
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A10SE (SW)	0	7	471102 105565
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A10SE (SW)	0	7	471099 105580
504	**Points of Interest - Manufacturing and Production** Name: Tanks Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A10SE (SW)	0	7	471089 105584
504	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A10SE (SW)	0	7	471101 105565
504	**Points of Interest - Manufacturing and Production** Name: Tanks Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A10SE (SW)	0	7	471090 105520
505	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A10NE (W)	0	7	471131 105741
505	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A10NE (W)	0	7	471124 105713

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
506	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NE (NW)	70	7	471047 105916
506	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NE (NW)	70	7	471047 105916
506	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (NW)	104	7	470973 105904
506	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (NW)	104	7	470973 105904
507	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10SE (SW)	72	7	471010 105491
507	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10SE (SW)	72	7	471010 105491
508	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A10NE (N)	79	7	471235 105989
509	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	109	7	470973 105720
510	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	184	7	470877 105862
510	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	184	7	470877 105862
510	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (NW)	226	7	470857 105946
510	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (NW)	226	7	470857 105946

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
511	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A15SW (N)	212	7	471386 106096
511	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A15SW (N)	223	7	471381 106108
512	**Points of Interest - Manufacturing and Production** Name: Havant Business Centre Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	277	7	470787 105793
512	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	345	7	470724 105753
512	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	348	7	470721 105752
513	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	311	7	471227 106225
514	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	314	7	471253 106224
514	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	320	7	471289 106224
514	**Points of Interest - Manufacturing and Production** Name: The Tanneries Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	328	7	471317 106228
515	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (NW)	345	7	471032 106253
516	**Points of Interest - Manufacturing and Production** Name: Works Location: 1b Brockhampton Lane, Havant, PO9 1LU Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A15SW (N)	394	7	471499 106259
517	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: PO9 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A14SW (NW)	426	7	470727 106114

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
518	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A15SE (NE)	451	7	471835 106174
518	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A15SE (NE)	466	7	471844 106186
519	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9SE (W)	521	7	470559 105629
519	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9SE (W)	524	7	470557 105627
520	**Points of Interest - Manufacturing and Production** Name: Tanks Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9SE (W)	534	7	470546 105631
520	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9SE (W)	574	7	470506 105658
520	**Points of Interest - Manufacturing and Production** Name: Tanks Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9SE (W)	575	7	470505 105648
520	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9SE (W)	578	7	470502 105656
520	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9SE (W)	584	7	470496 105652
520	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SE (W)	605	7	470475 105627
520	**Points of Interest - Manufacturing and Production** Name: Basepoint Business Centre Location: 1 Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A9NE (W)	606	7	470461 105742

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
520	**Points of Interest - Manufacturing and Production** Name: Basepoint Business Centre Location: 10 Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A9NE (W)	606	7	470461 105742
520	**Points of Interest - Manufacturing and Production** Name: Broadmarsh Business & Innovation Centre Location: 10 Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A9NE (W)	606	7	470461 105742
520	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9SE (W)	607	7	470473 105659
520	**Points of Interest - Manufacturing and Production** Name: Works Location: PO9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SE (W)	609	7	470471 105627
521	**Points of Interest - Manufacturing and Production** Name: Basepoint Business Centre Location: Broadmarsh Business & Innovation Centre, Harts Farm Way, Havant, PO9 1HS Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A9NE (W)	664	7	470402 105748
522	**Points of Interest - Manufacturing and Production** Name: Tank (Disused) Location: PO9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NW (W)	900	7	470171 105988
523	**Points of Interest - Public Infrastructure** Name: Tesco Petrol Filling Station Location: Solent Road, Havant, PO9 1TR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A11NW (N)	133	7	471407 106011
523	**Points of Interest - Public Infrastructure** Name: Tesco Petrol Filling Station Location: Solent Road, Havant, PO9 1TR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A11NW (NE)	156	7	471494 106017
523	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A15SW (NE)	200	7	471540 106052
524	**Points of Interest - Public Infrastructure** Name: Tesco Havant Extra Location: Solent Road, Havant, PO9 1TR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A14SE (N)	141	7	471280 106044
525	**Points of Interest - Public Infrastructure** Name: Budds Farm Sewage Works Location: PO9 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A10SW (SW)	238	7	470846 105465

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
526	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A10NW (W)	334	7	470744 105716
526	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A10SW (W)	390	7	470691 105684
527	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	347	7	471090 106268
528	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	354	7	471247 106265
528	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	371	7	471191 106291
528	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	376	7	471227 106291
529	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A7SW (S)	461	7	471390 105025
529	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A7SW (S)	480	7	471424 105009
530	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A7NE (SE)	492	7	471944 105334
531	**Points of Interest - Public Infrastructure** Name: Bus Station Location: PO9 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A15SW (NE)	522	7	471637 106361
532	**Points of Interest - Public Infrastructure** Name: Norman Travel Location: 48 Park Way, Havant, PO9 1HH Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A14NE (N)	550	7	471309 106454
532	**Points of Interest - Public Infrastructure** Name: Havant Fire Station Location: Fire Station, Park Way, Havant, PO9 1HH Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A15NW (N)	563	7	471407 106450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
533	**Points of Interest - Public Infrastructure** Name: Weirs Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (NW)	606	7	470639 106283
533	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (NW)	645	7	470547 106239
533	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (NW)	674	7	470556 106295
534	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SW (NW)	608	7	470692 106337
535	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14NW (NW)	666	7	470926 106556
536	**Points of Interest - Public Infrastructure** Name: Outfall Location: PO9 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A5NE (SW)	677	7	470525 105111
537	**Points of Interest - Public Infrastructure** Name: Angel Radio Location: 17 Market Parade, Havant, PO9 1PY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A15NE (NE)	697	7	471733 106515
538	**Points of Interest - Public Infrastructure** Name: Bedhampton Rail Station Location: Palk Road, PO9 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A14NW (NW)	718	7	470735 106518
538	**Points of Interest - Public Infrastructure** Name: Bedhampton Station Location: Palk Road, PO9 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A14NW (NW)	718	7	470735 106518
539	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NE (W)	745	7	470318 105785
539	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (W)	799	7	470261 105844
540	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (NW)	772	7	470331 106102

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
540	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (W)	793	7	470299 106071
541	**Points of Interest - Public Infrastructure** Name: Weir Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SE (NW)	773	7	470422 106284
542	**Points of Interest - Public Infrastructure** Name: Havant Rail Station Location: North Street, PO9 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A15NE (NE)	802	7	471795 106605
542	**Points of Interest - Public Infrastructure** Name: Havant Station Location: North Street, PO9 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A15NE (NE)	802	7	471795 106605
543	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (NW)	926	7	470251 106298
543	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (NW)	965	7	470235 106349
543	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (NW)	982	7	470166 106253
544	**Points of Interest - Public Infrastructure** Name: Havant Police Station Location: Havant Police Station, Civic Centre Road, Havant, PO9 2AN Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A19SW (N)	944	7	471648 106791
544	**Points of Interest - Public Infrastructure** Name: Hampshire & Isle of Wight Constabulary Location: Civic Centre Road, Havant, PO9 2AN Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A19SW (N)	944	7	471648 106791
544	**Points of Interest - Public Infrastructure** Name: Hampshire & Isle of Wight Constabulary Location: Havant Police Station, Civic Centre Road, Havant, PO9 2AN Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A19SW (N)	944	7	471648 106791
545	**Points of Interest - Public Infrastructure** Name: Sluice Location: PO9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A5NW (W)	979	7	470123 105303
546	**Points of Interest - Recreational and Environmental** Name: Balancing Pond Location: PO9 Category: Bodies of Water Class Code: Settling, Balancing and Silt Ponds Positional Accuracy: Positioned to address or location	A10SE (SW)	15	7	471145 105476

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
547	**Points of Interest - Recreational and Environmental** Name: Picnic Place Location: Nr Southmoor Lane, PO9 Category: Recreational Class Code: Picnic Areas Positional Accuracy: Positioned to an adjacent address or location	A6NW (SW)	530	7	470764 105069
548	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A15NW (N)	580	7	471570 106435
548	**Points of Interest - Recreational and Environmental** Name: Playground Location: Park Road North, PO9 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A15NW (N)	580	7	471570 106435
549	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (NW)	845	7	470473 106456
549	**Points of Interest - Recreational and Environmental** Name: Playground Location: King'S Croft Lane, PO9 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (NW)	846	7	470473 106457

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
550	**Areas of Outstanding Natural Beauty** Name: Chichester Harbour Multiple Areas: N Total Area (m2): 73161989.56 Designation Date: 28th February 1964 Source: Natural England	A7NE (SE)	406	8	471821 105305
551	**Nitrate Vulnerable Zones** Name: Chichester,Langstone And Portsmouth Harbours Eutrophic Nvz (Trac) Description: Eutrophic Water Source: Environment Agency, Head Office	A10SE (N)	0	4	471296 105698
552	**Nitrate Vulnerable Zones** Name: Warblington Stream - No.2 Nvz Description: Surface Water Source: Environment Agency, Head Office	A12SE (E)	856	4	472450 105591
553	**Ramsar Sites** Name: Chichester And Langstone Harbours Multiple Areas: Y Total Area (m2): 58128984.11 Source: Natural England Reference: UK11013 Designation Date: Not Supplied	A6NE (S)	306	8	471178 105182
554	**Sites of Special Scientific Interest** Name: Langstone Harbour Multiple Areas: Y Total Area (m2): 20853522.27 Source: Natural England Reference: 1001182 Designation Details: Local Nature Reserve Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Local Wildlife Site Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Ramsar Site Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Special Area Of Conservation Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Special Protection Area Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 22nd February 1985 Date Type: Notified Designation Details: Water Framework Directive (WFD) Designation Date: 22nd February 1985 Date Type: Notified	A6NE (S)	306	8	471178 105182
555	**Sites of Special Scientific Interest** Name: Chichester Harbour Multiple Areas: N Total Area (m2): 37335261.41 Source: Natural England Reference: 1003245 Designation Details: Local Nature Reserve Designation Date: 30th July 1985 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 30th July 1985 Date Type: Notified Designation Details: Ramsar Site Designation Date: 30th July 1985 Date Type: Notified Designation Details: Special Area Of Conservation Designation Date: 30th July 1985 Date Type: Notified Designation Details: Special Protection Area Designation Date: 30th July 1985 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 30th July 1985 Date Type: Notified Designation Details: Water Framework Directive (WFD) Designation Date: 30th July 1985 Date Type: Notified	A8NW (SE)	745	8	472110 105142

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
556	**Special Areas of Conservation** Name: Solent Maritime Multiple Areas: Y Total Area (m2): 112408255.03 Source: Natural England Reference: UK0030059 **Status: Designated**	A5NE (SW)	544	8	470610 105222
557	**Special Protection Areas** Name: Chichester And Langstone Harbours Multiple Areas: Y Total Area (m2): 58128983.559999995 Source: Natural England Reference: UK9011011 Designation Date: Not Supplied	A6NE (S)	306	8	471178 105182

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hampshire District Council - Environmental Health Department	January 2015	Annual Rolling Update
Havant Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Portsmouth City Council - Health and Trading Standards	October 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	January 2019	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region	January 2019	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Portsmouth City Council - Environmental Health Department	August 2014	Variable
East Hampshire District Council - Environmental Health Department	December 2014	Variable
Winchester City Council - Environmental Health Department	December 2014	Variable
Havant Borough Council - Environmental Health Department	December 2015	Variable
Chichester District Council - Environmental Health Department	October 2014	Variable
Local Authority Pollution Prevention and Controls		
Portsmouth City Council - Environmental Health Department	August 2014	Not Applicable
East Hampshire District Council - Environmental Health Department	December 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	December 2014	Annual Rolling Update
Havant Borough Council - Environmental Health Department	December 2015	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Not Applicable
Local Authority Pollution Prevention and Control Enforcements		
Portsmouth City Council - Environmental Health Department	August 2014	Variable
East Hampshire District Council - Environmental Health Department	December 2014	Variable
Winchester City Council - Environmental Health Department	December 2014	Variable
Havant Borough Council - Environmental Health Department	December 2015	Variable
Chichester District Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	January 2019	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Registered Radioactive Substances		
Environment Agency - Southern Region	June 2016	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually

Data Currency

Agency & Hydrological	Version	Update Cycle
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	January 2019	Quarterly
Environment Agency - Southern Region - Solent and South Downs	January 2019	Quarterly
Environment Agency - Southern Region - Sussex Area	January 2019	Quarterly
Water Abstractions		
Environment Agency - Southern Region	January 2019	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability Map		
Environment Agency - Head Office	June 2018	Annually
Groundwater Vulnerability - Soluble Rock Risk		
Environment Agency - Head Office	June 2018	Annually
Bedrock Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Source Protection Zones		
Environment Agency - Head Office	January 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2019	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2019	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2019	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2019	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2019	Quarterly
OS Water Network Lines		
Ordnance Survey	January 2019	Quarterly
Surface Water 1 in 30 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability		
Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	July 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	July 2018	Quarterly
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	July 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	July 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	July 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	January 2019	Quarterly
Environment Agency - Southern Region - Solent and South Downs	January 2019	Quarterly
Environment Agency - Southern Region - Sussex Area	January 2019	Quarterly
Local Authority Landfill Coverage		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Chichester District Council - Planning Department	February 2016	Variable
East Hampshire District Council	February 2016	Variable
Hampshire County Council - Minerals and Waste Planning	February 2016	Variable
Havant Borough Council - Commercial Team	February 2016	Variable
Portsmouth City Council - Planning Office	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Variable
Planning Hazardous Substance Consents		
Chichester District Council - Planning Department	February 2016	Variable
East Hampshire District Council	February 2016	Variable
Hampshire County Council - Minerals and Waste Planning	February 2016	Variable
Havant Borough Council - Commercial Team	February 2016	Variable
Portsmouth City Council - Planning Office	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Winchester City Council - Planning Department	October 2015	Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2019	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	January 2019	Quarterly
Fuel Station Entries Catalist Ltd - Experian	May 2019	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	November 2018	Quarterly
Points of Interest - Education and Health PointX	November 2018	Quarterly
Points of Interest - Manufacturing and Production PointX	November 2018	Quarterly
Points of Interest - Public Infrastructure PointX	November 2018	Quarterly
Points of Interest - Recreational and Environmental PointX	November 2018	Quarterly
Underground Electrical Cables National Grid	December 2015	

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	August 2018	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	August 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	March 2019	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	August 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest Natural England	March 2019	Bi-Annually
Special Areas of Conservation Natural England	August 2018	Bi-Annually
Special Protection Areas Natural England	April 2019	Bi-Annually

Data Suppliers

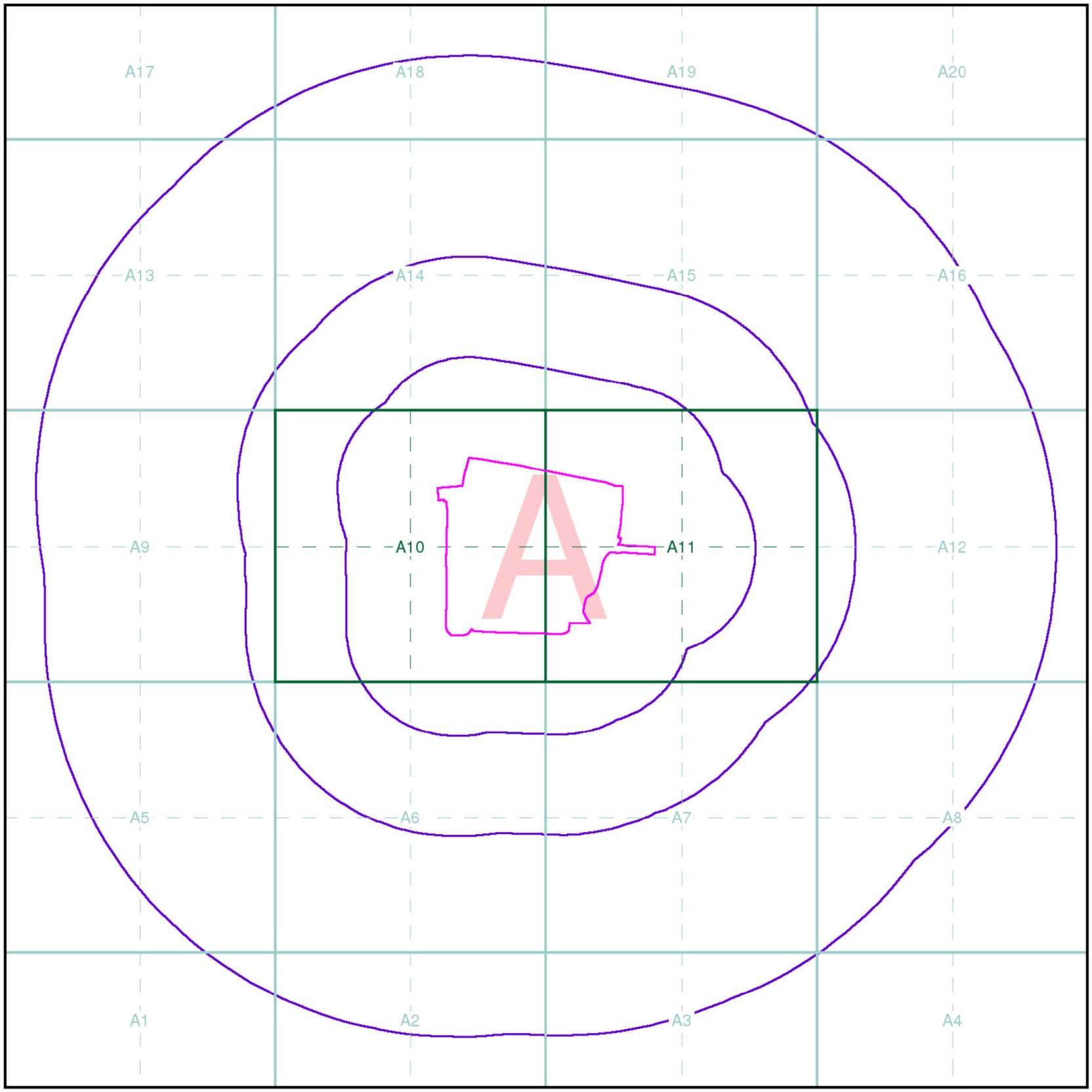
A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
8	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr S Clennell-Jones, Delta Simons, 20 Little Britain, London, London, EC1A 7D

Order Details

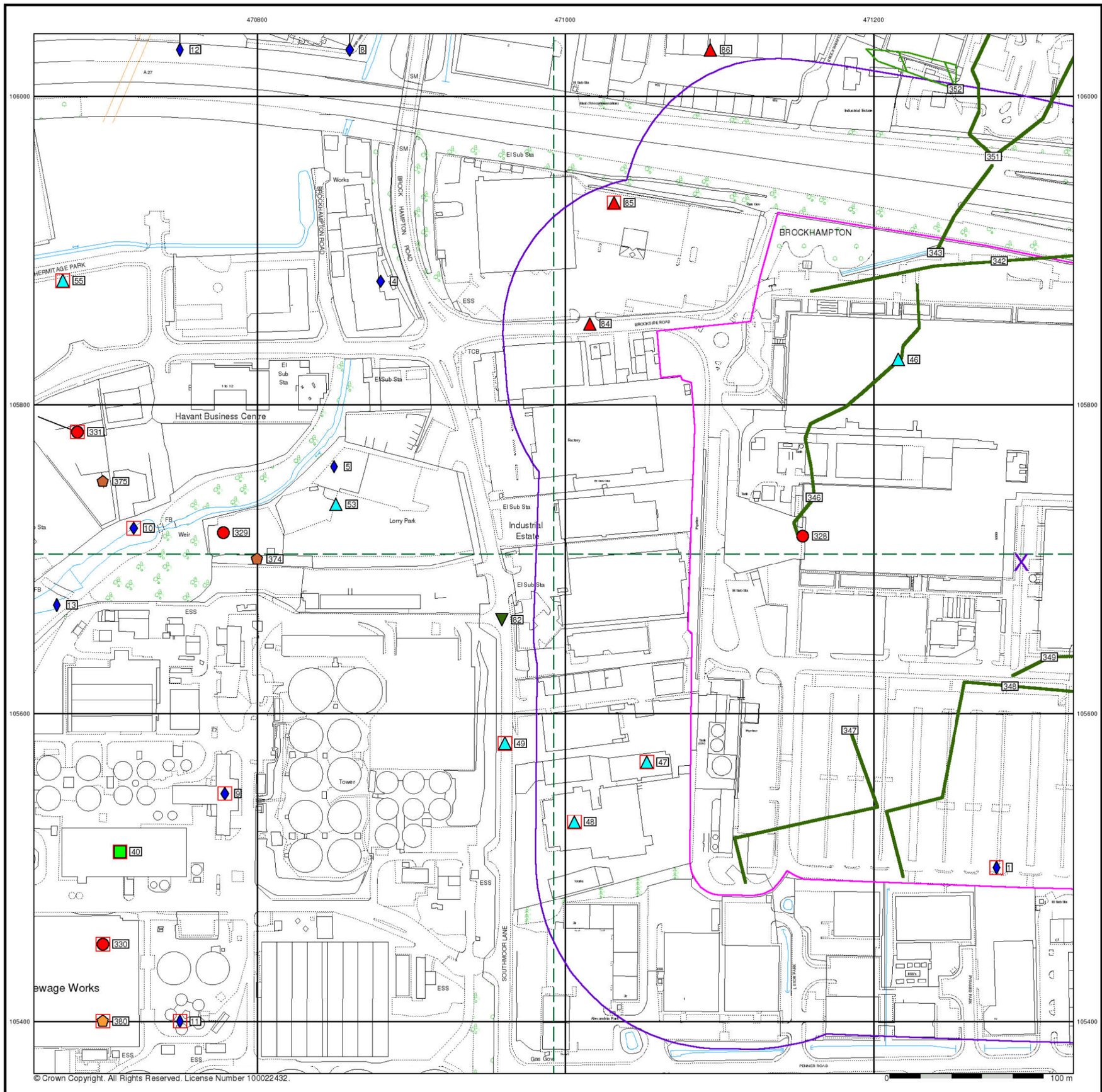
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Customer Ref:	19-0687.01
National Grid Reference:	471280, 105700
Site Area (Ha):	16.11
Search Buffer (m):	1000

Site Details

Hydroco, Langstone Technology Park 2b, Langstone Road, HAVANT, PO9 1SA

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
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- Local Authority Pollution Prevention and Control Enforcement
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- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

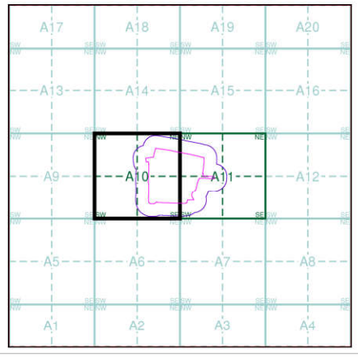
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A10



Order Details

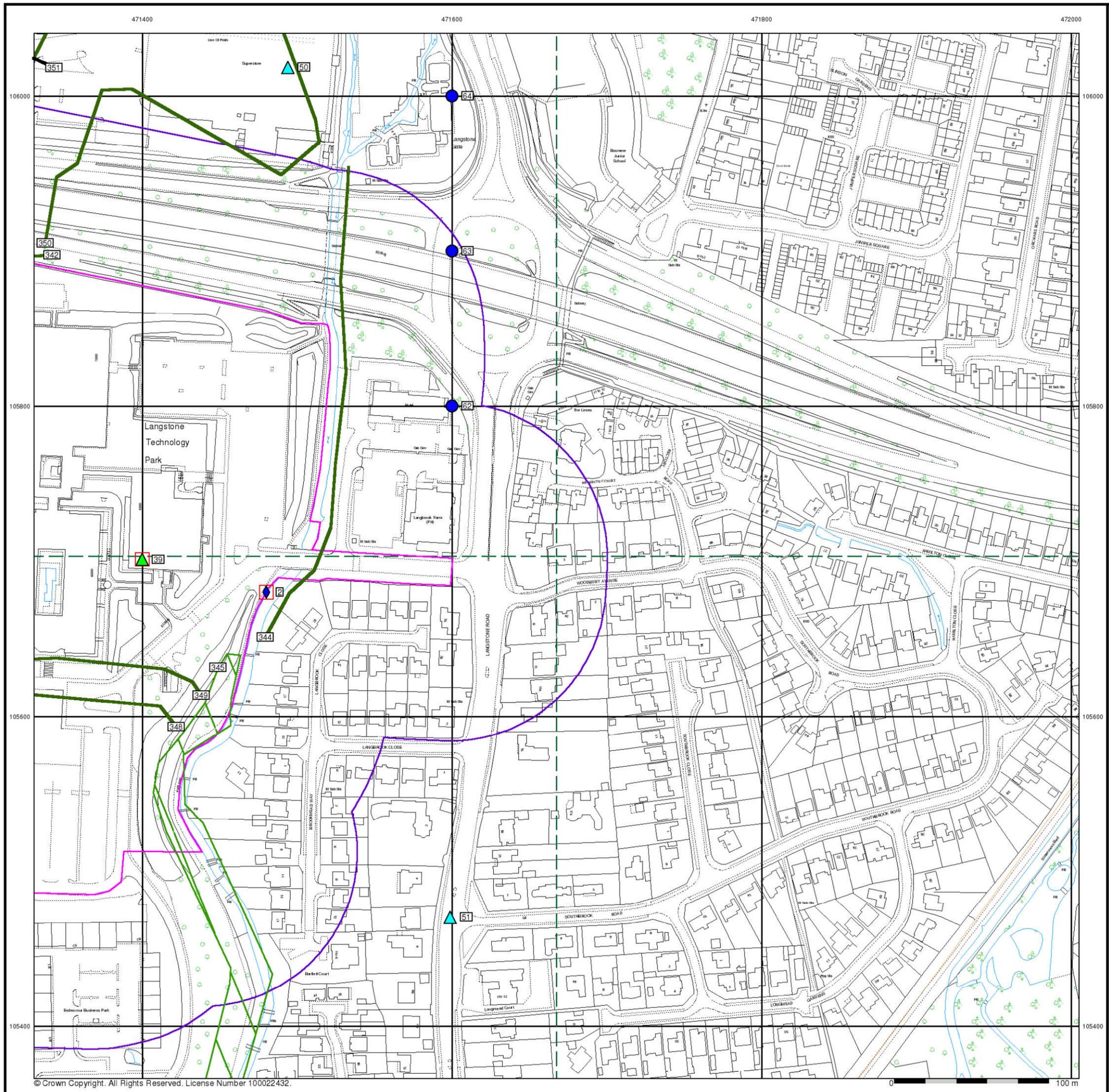
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Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
Site Area (Ha):	16.11
Plot Buffer (m):	100

Site Details

Hydroco, Langstone Technology Park 2b, Langstone Road, HAVANT, PO9 1SA

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General

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- Integrated Pollution Prevention Control
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- River Quality Sampling Point
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- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

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- NIHHS Site
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- Planning Hazardous Substance Enforcement

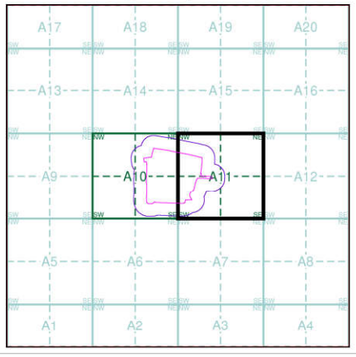
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- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A11



Order Details

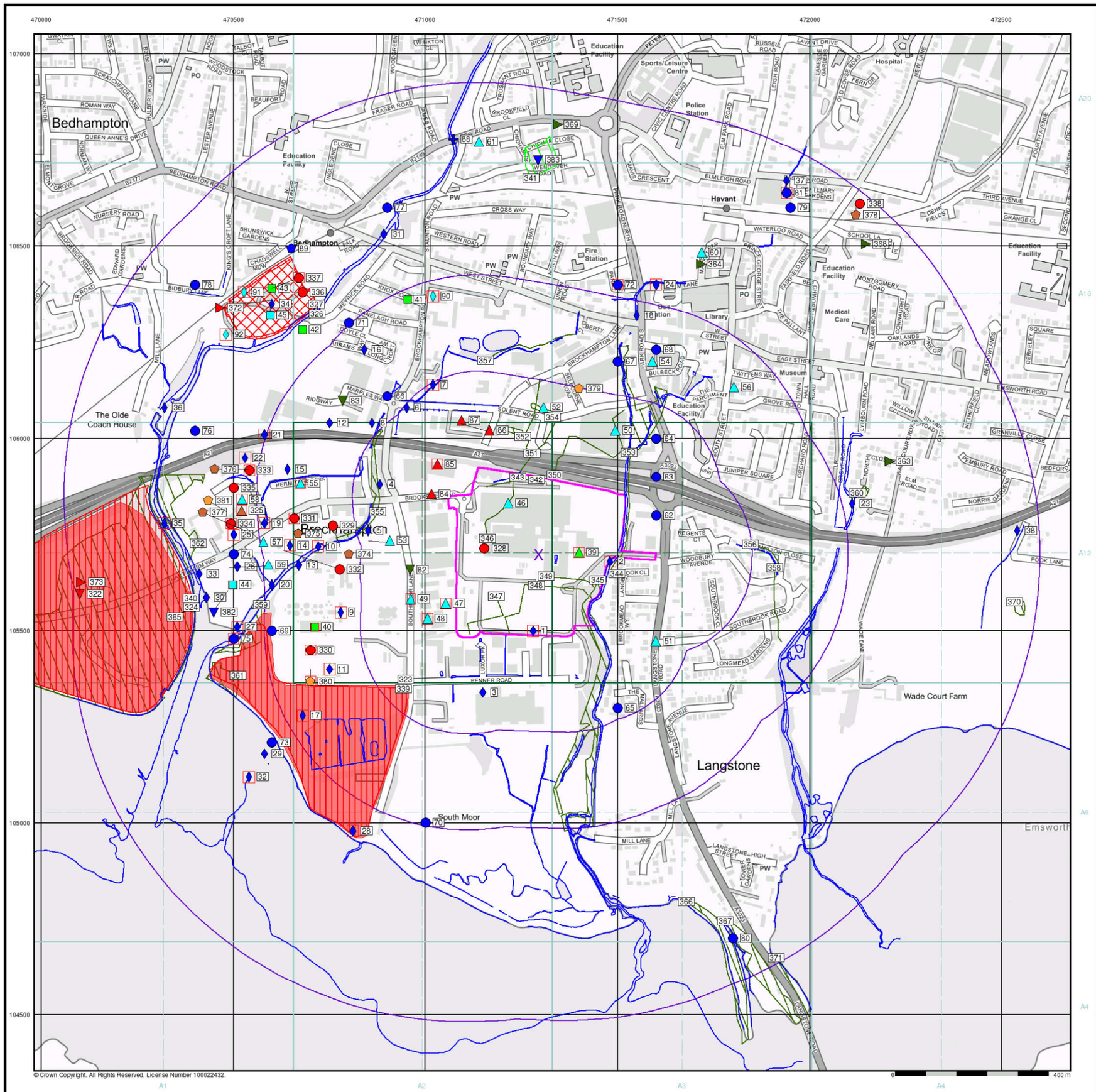
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Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
Site Area (Ha):	16.11
Plot Buffer (m):	100

Site Details

Hydroco, Langstone Technology Park 2b, Langstone Road, HAVANT, PO9 1SA

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General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
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- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
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- Prosecution Relating to Controlled Waters
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- River Network or Water Feature
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- Water Industry Act Referral

Hazardous Substances

COMAH Site | Explosive Site | NIHHS Site

- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

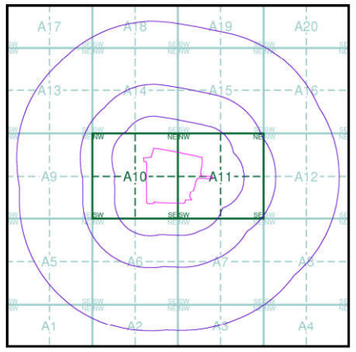
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- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

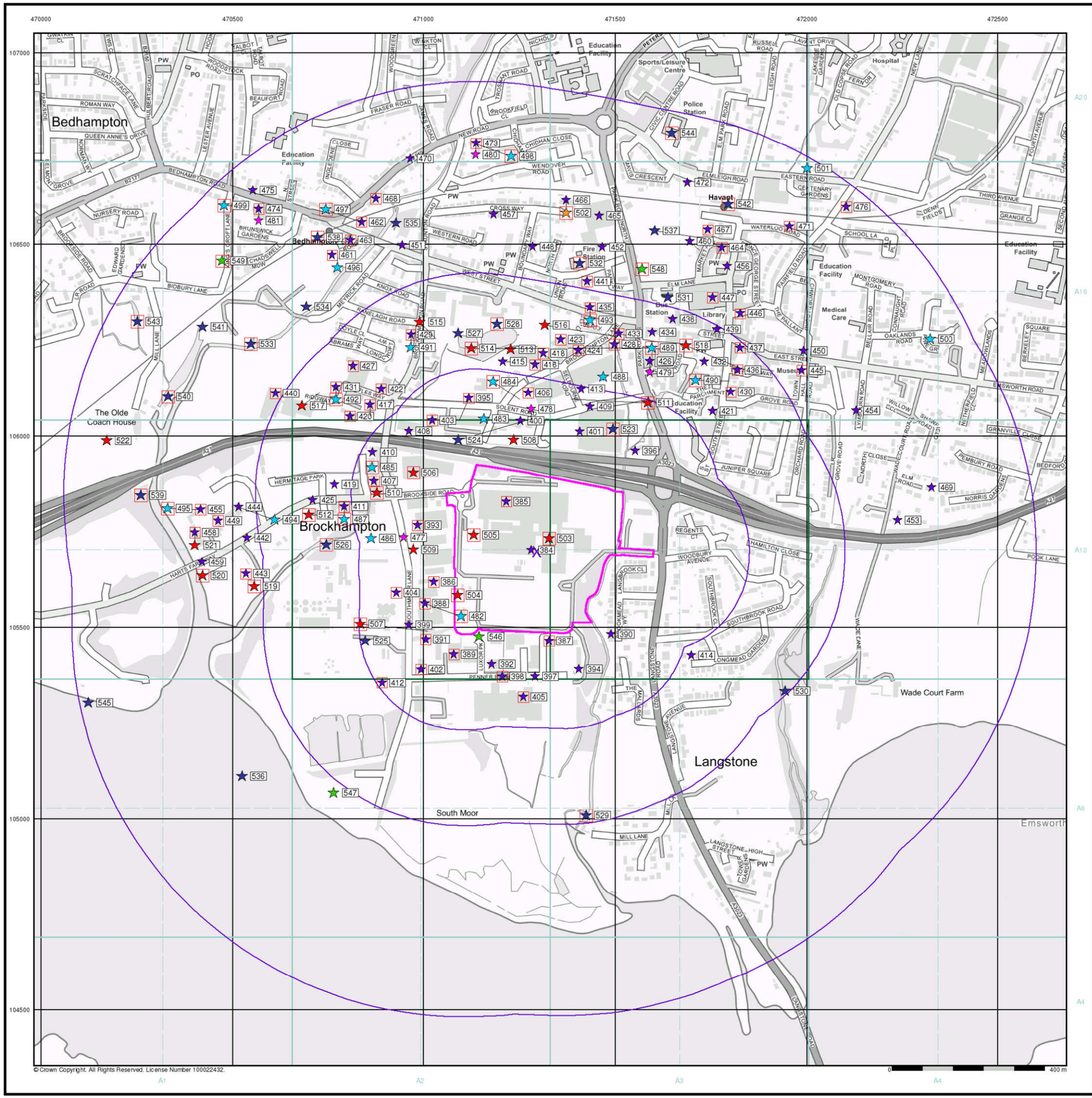
Order Number:	203439487_1_1
Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
Site Area (Ha):	16.11
Search Buffer (m):	1000

Site Details

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Industrial Land Use Map

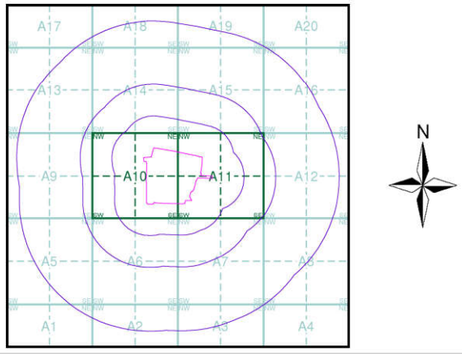
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

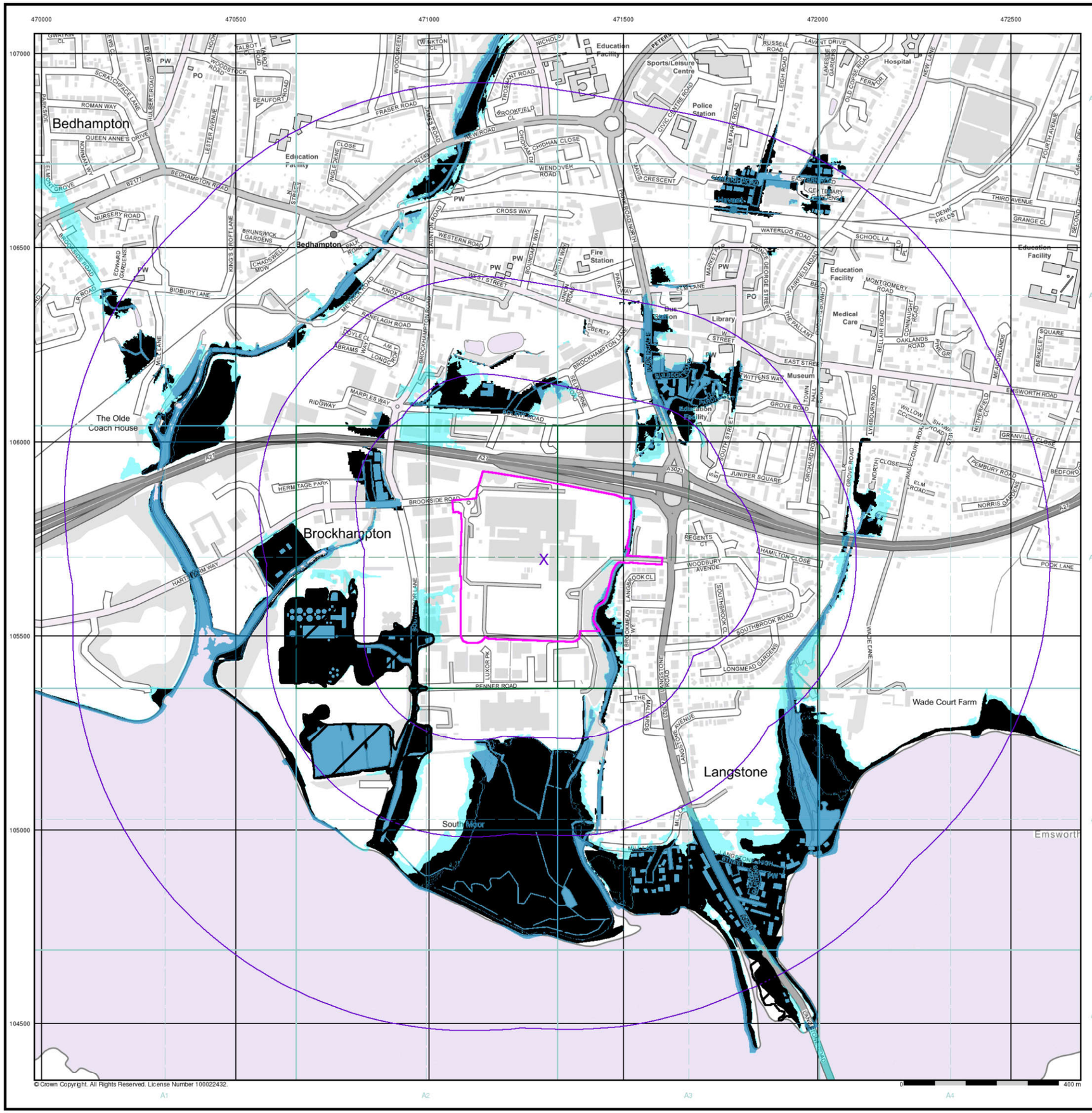
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Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
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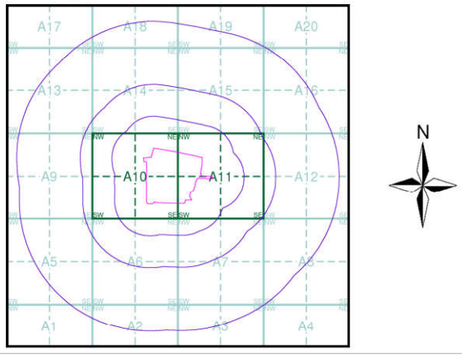
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



Order Details

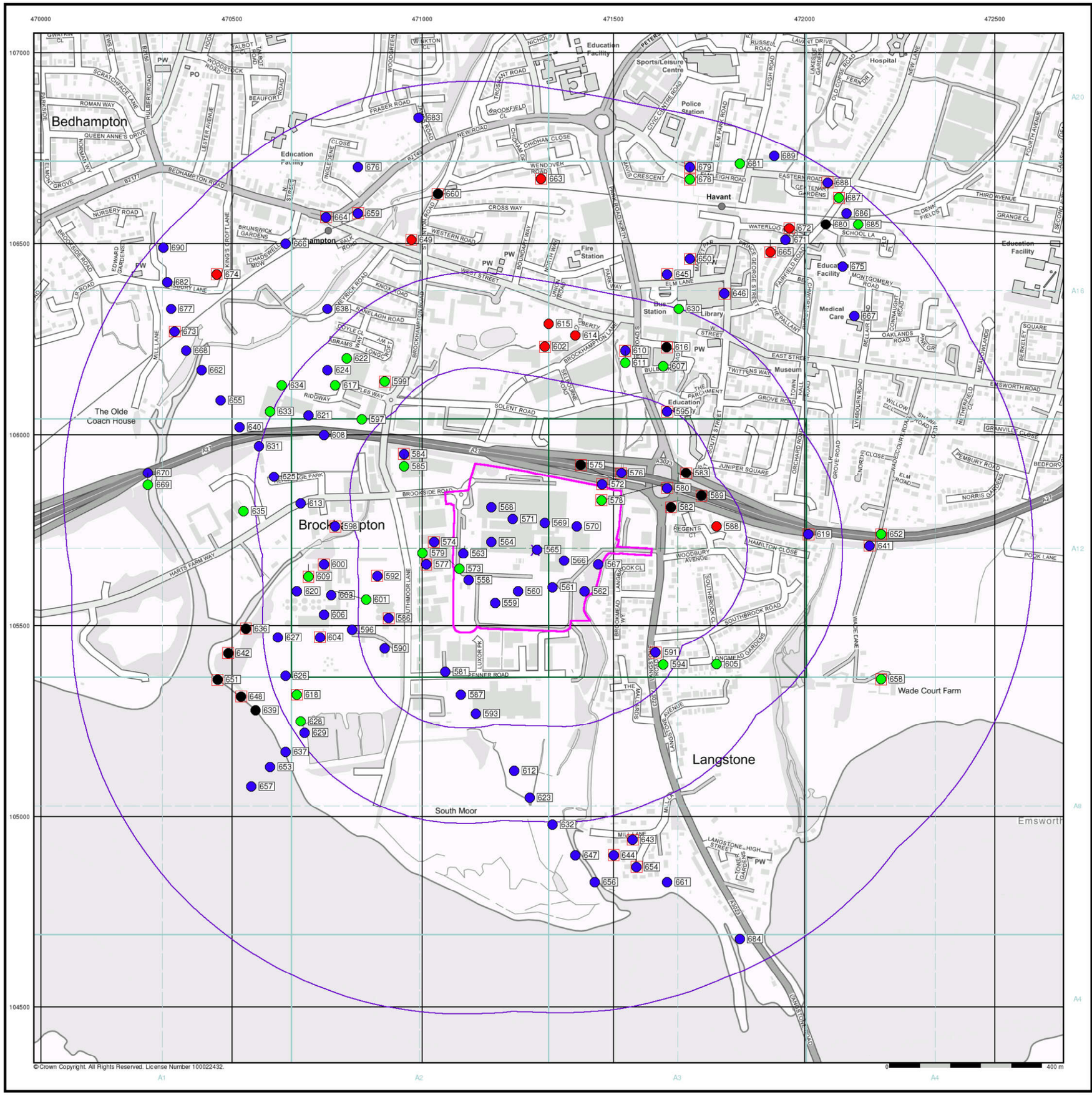
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Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
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General

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- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

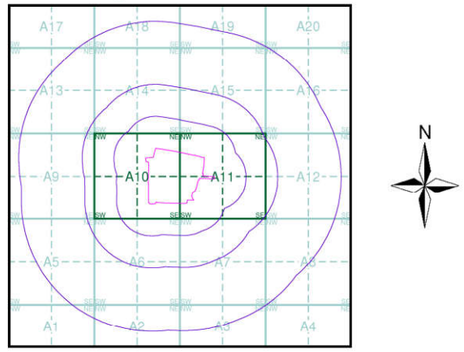
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

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

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

Borehole Map - Slice A

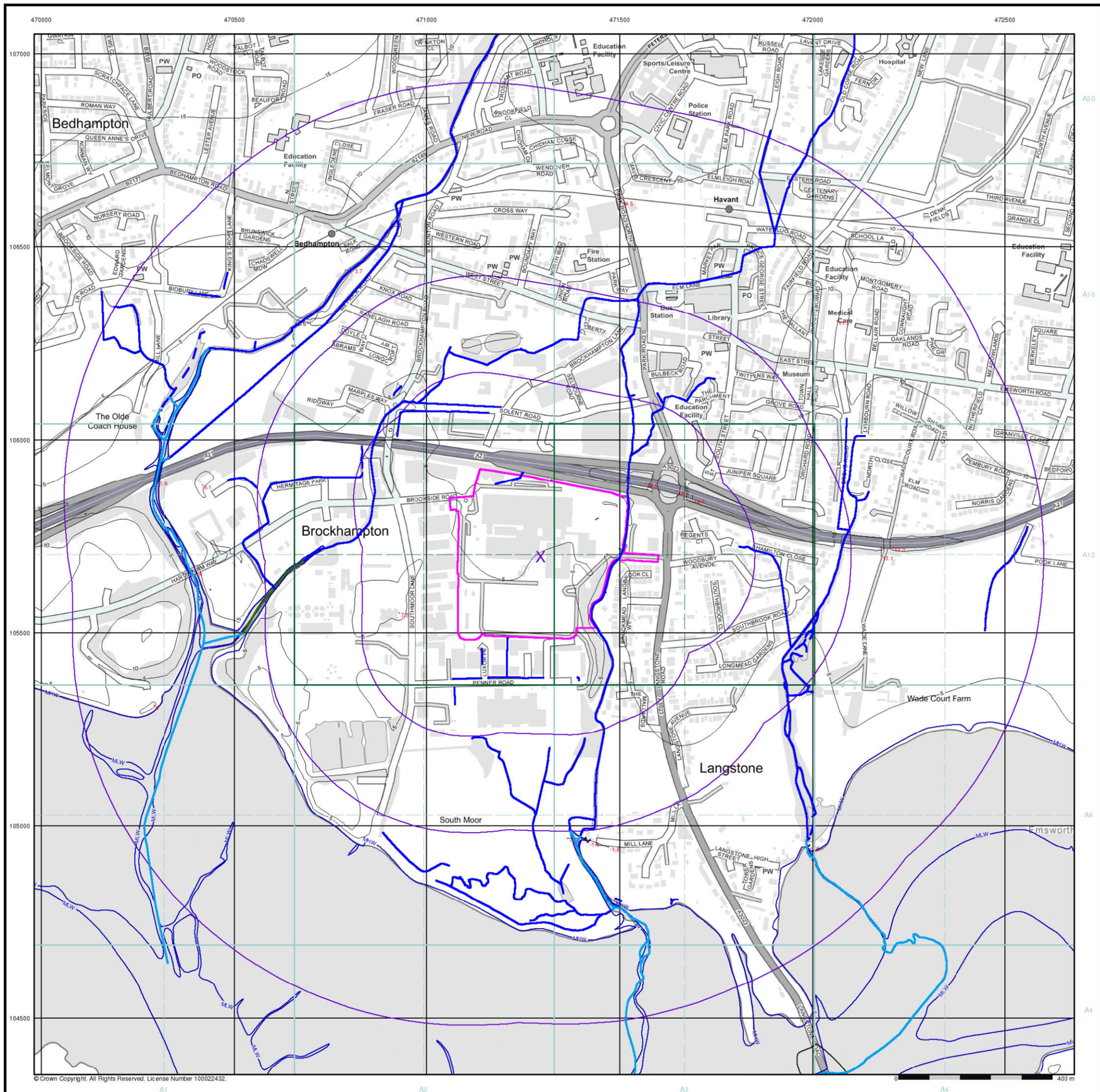


Order Details

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General

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

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

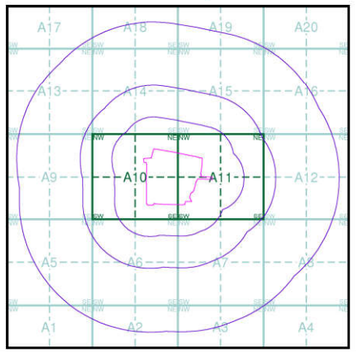
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

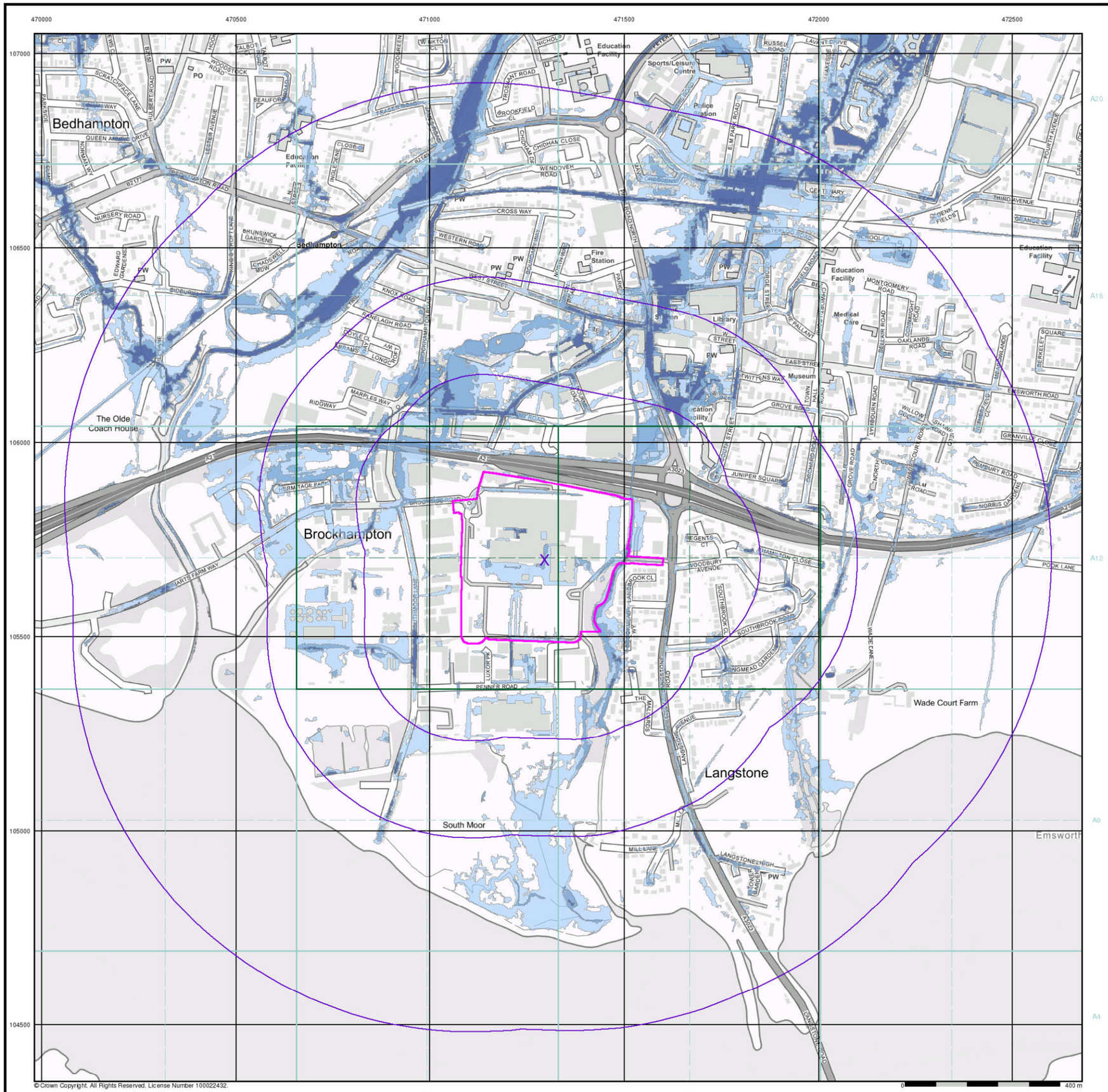
Order Number:	203439487_1_1
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General

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

Risk of Flooding from Surface Water

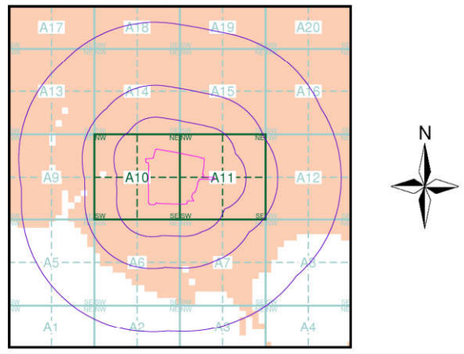
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

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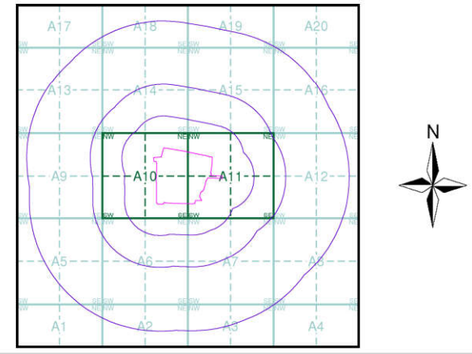
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

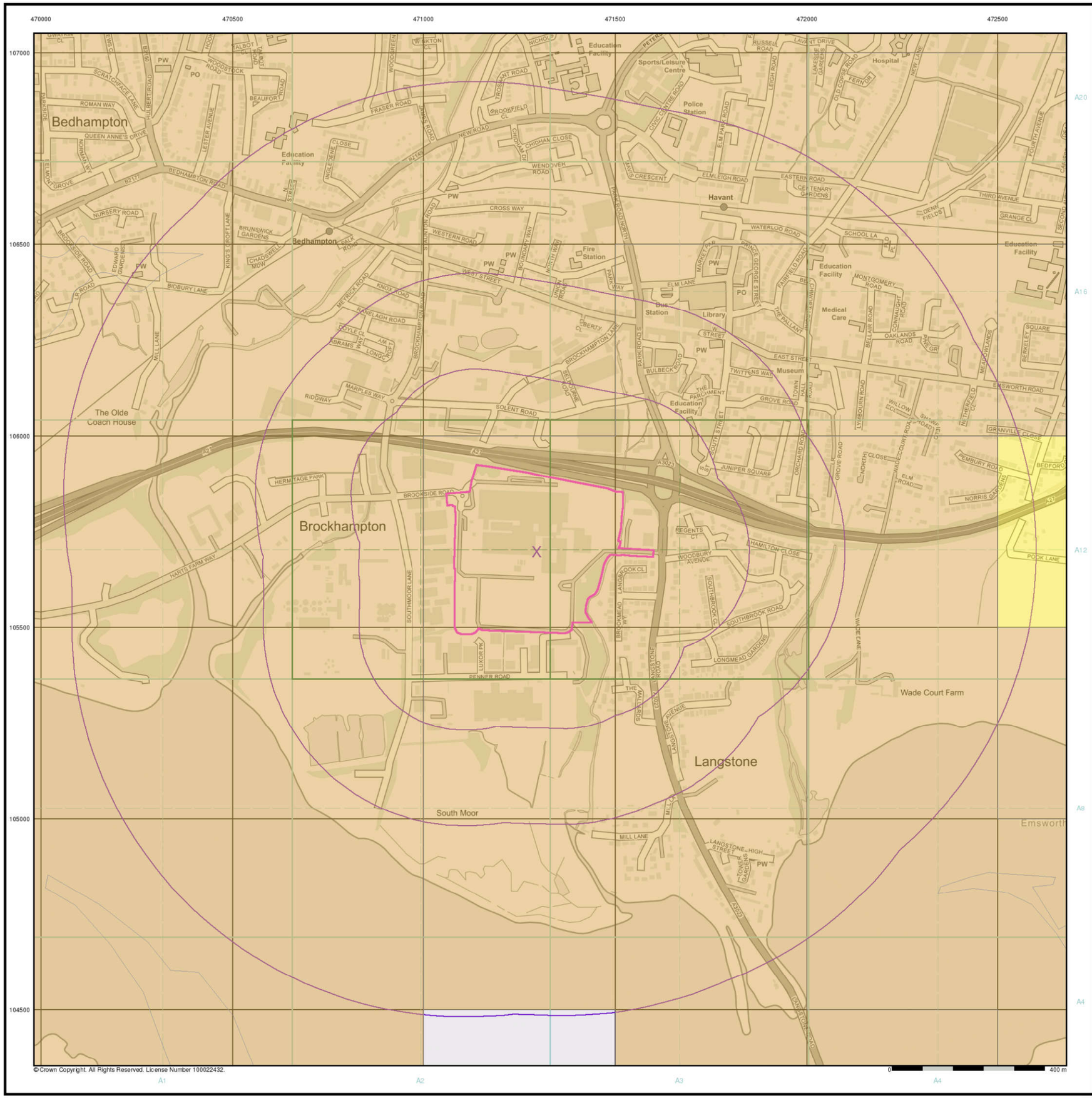
Order Details:	203439487_1_1
Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
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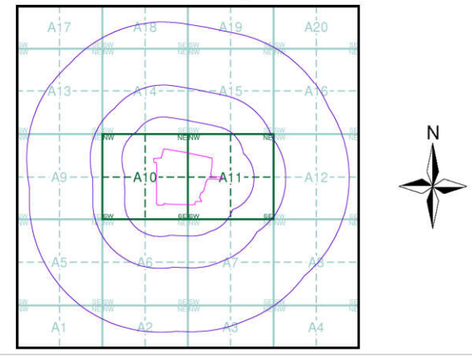
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

Order Details:	203439487_1_1
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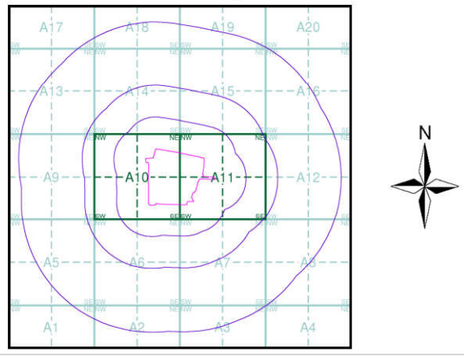
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

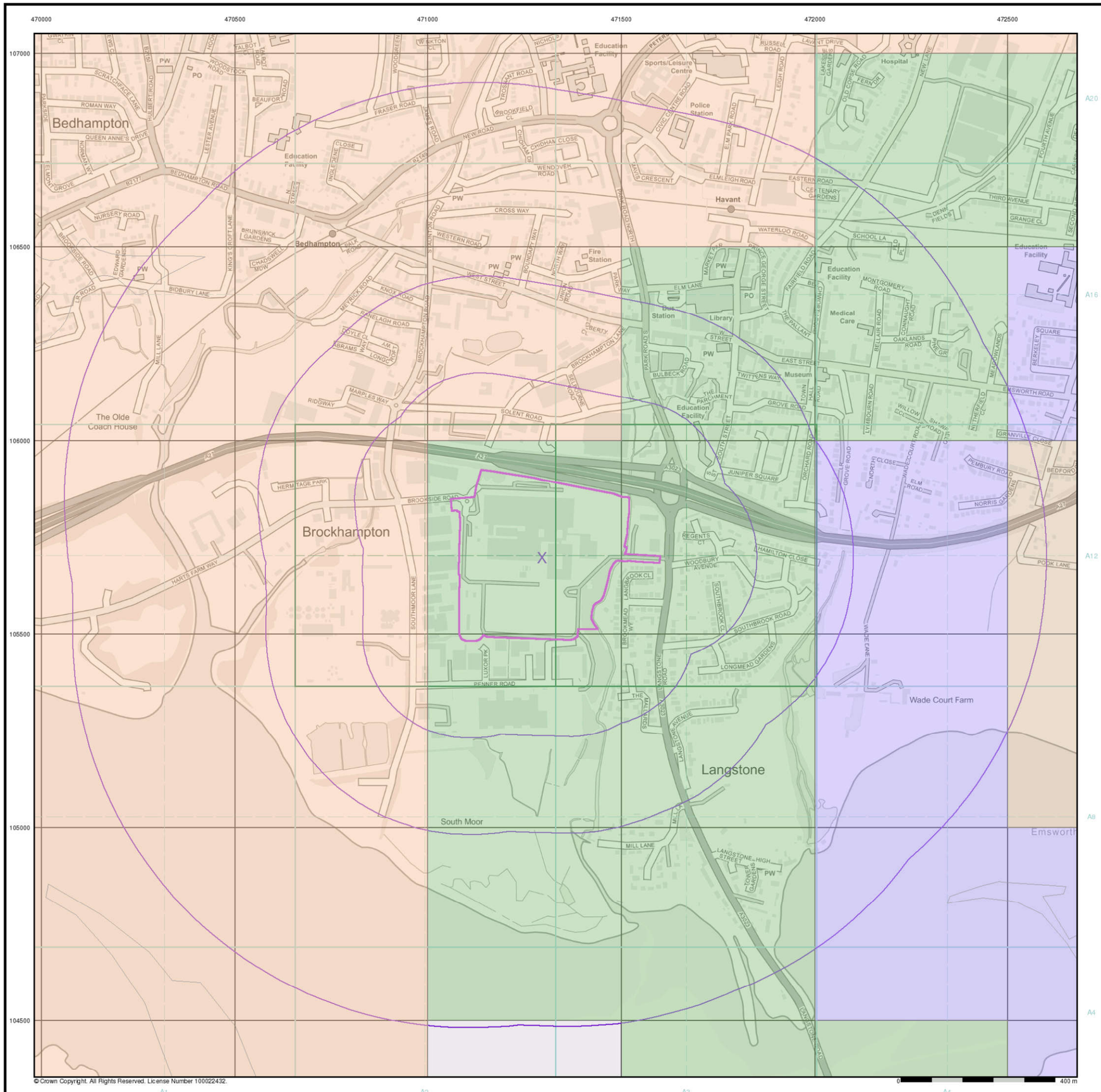
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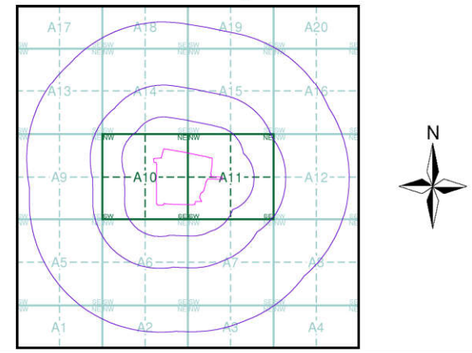
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

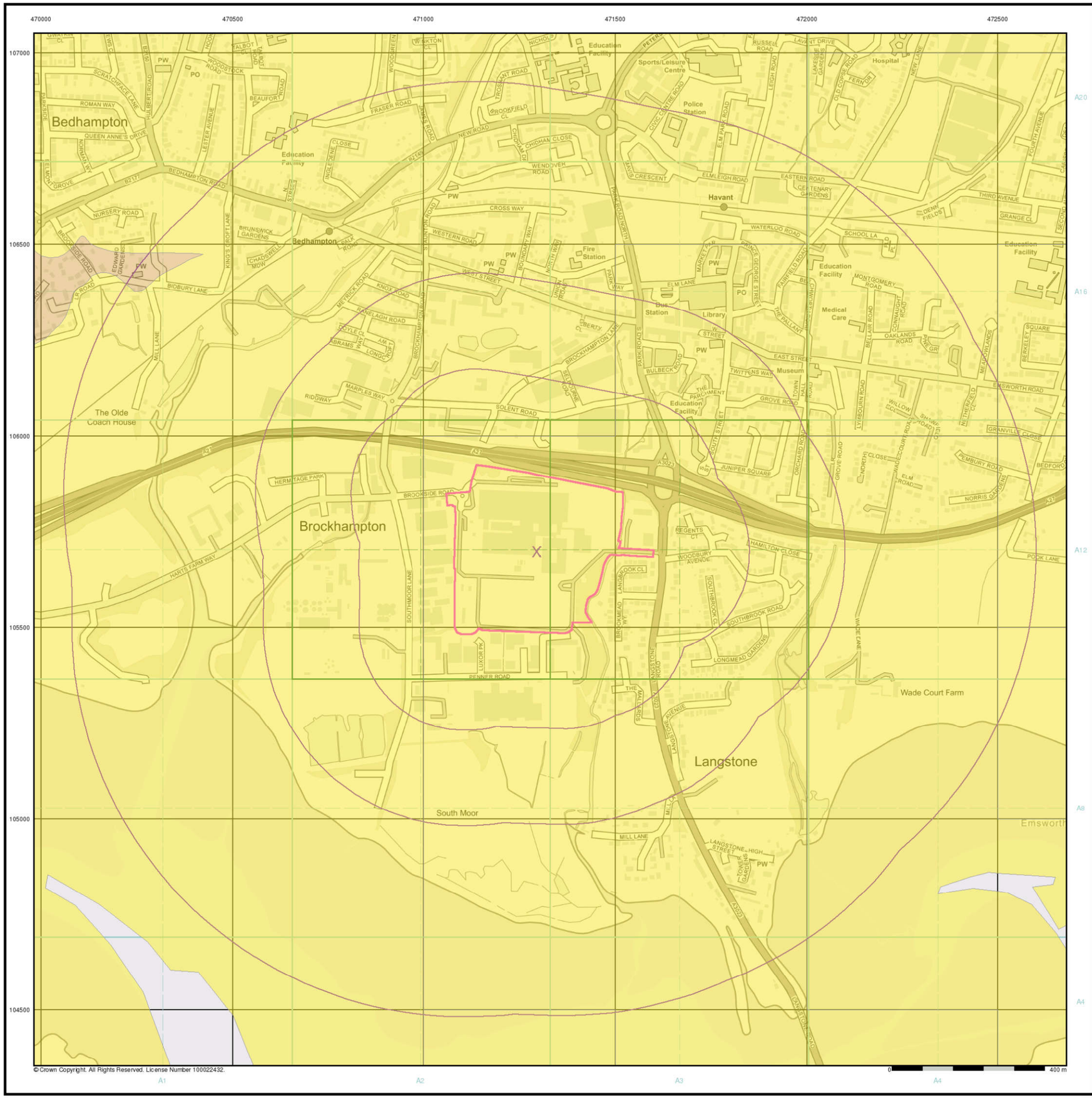
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Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
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Site Area (Ha):	16.11
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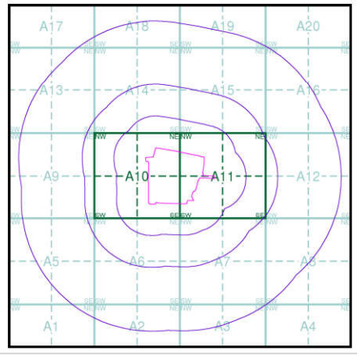
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

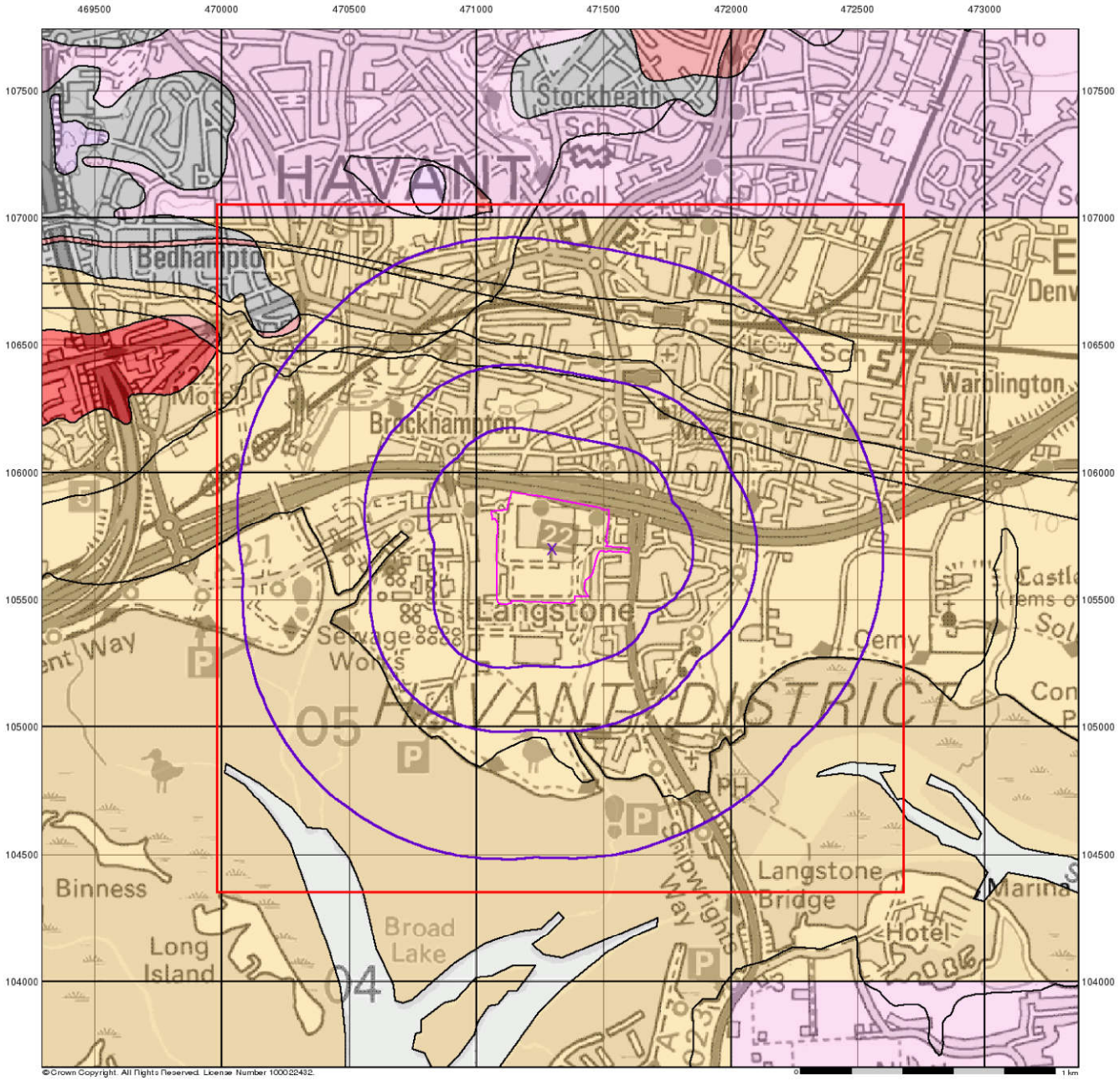
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Groundwater Vulnerability

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

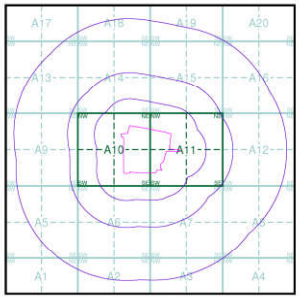
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

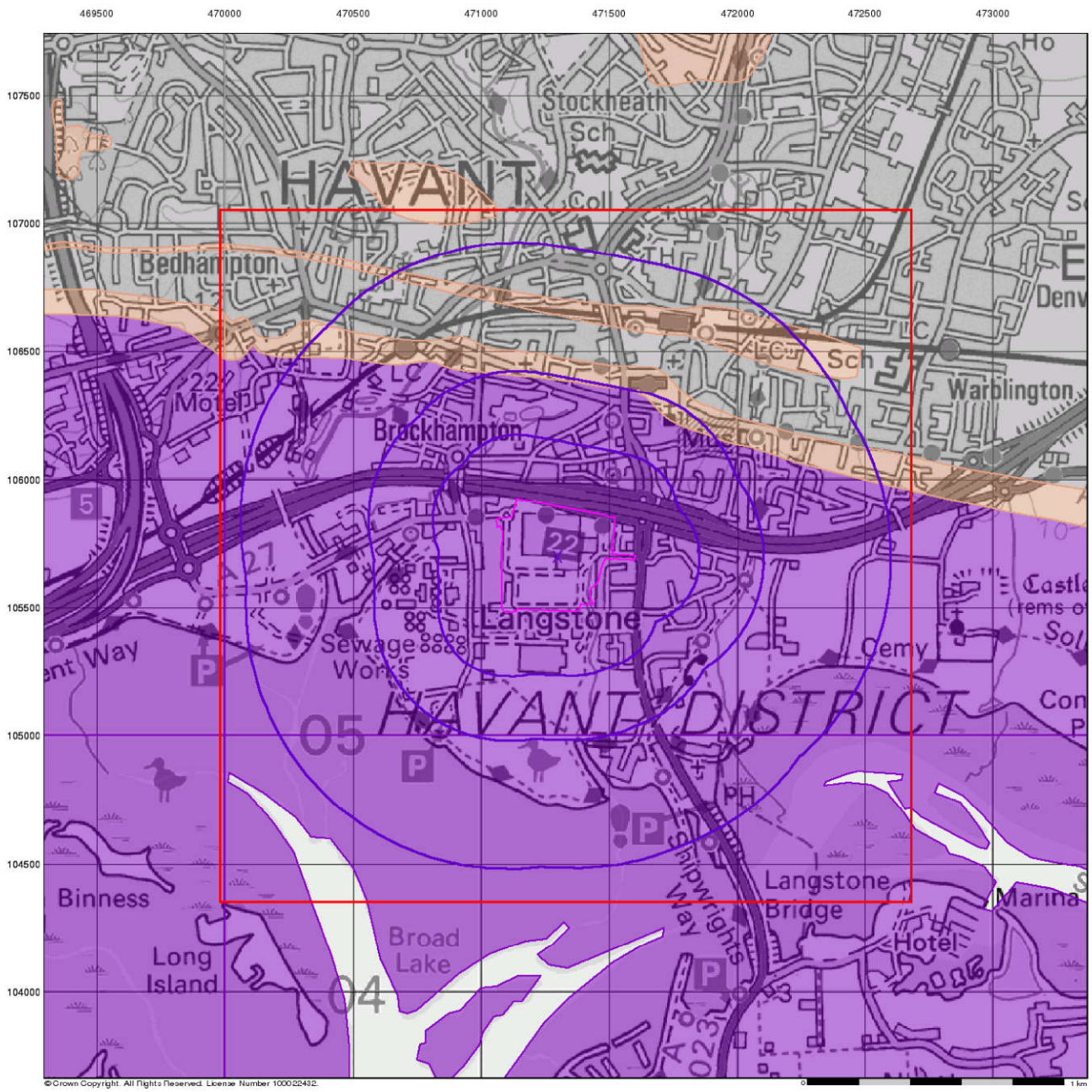
Order Number:	203439487_1_1
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Bedrock Aquifer Designation

General

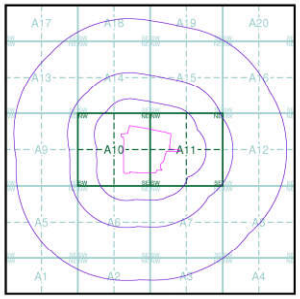
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

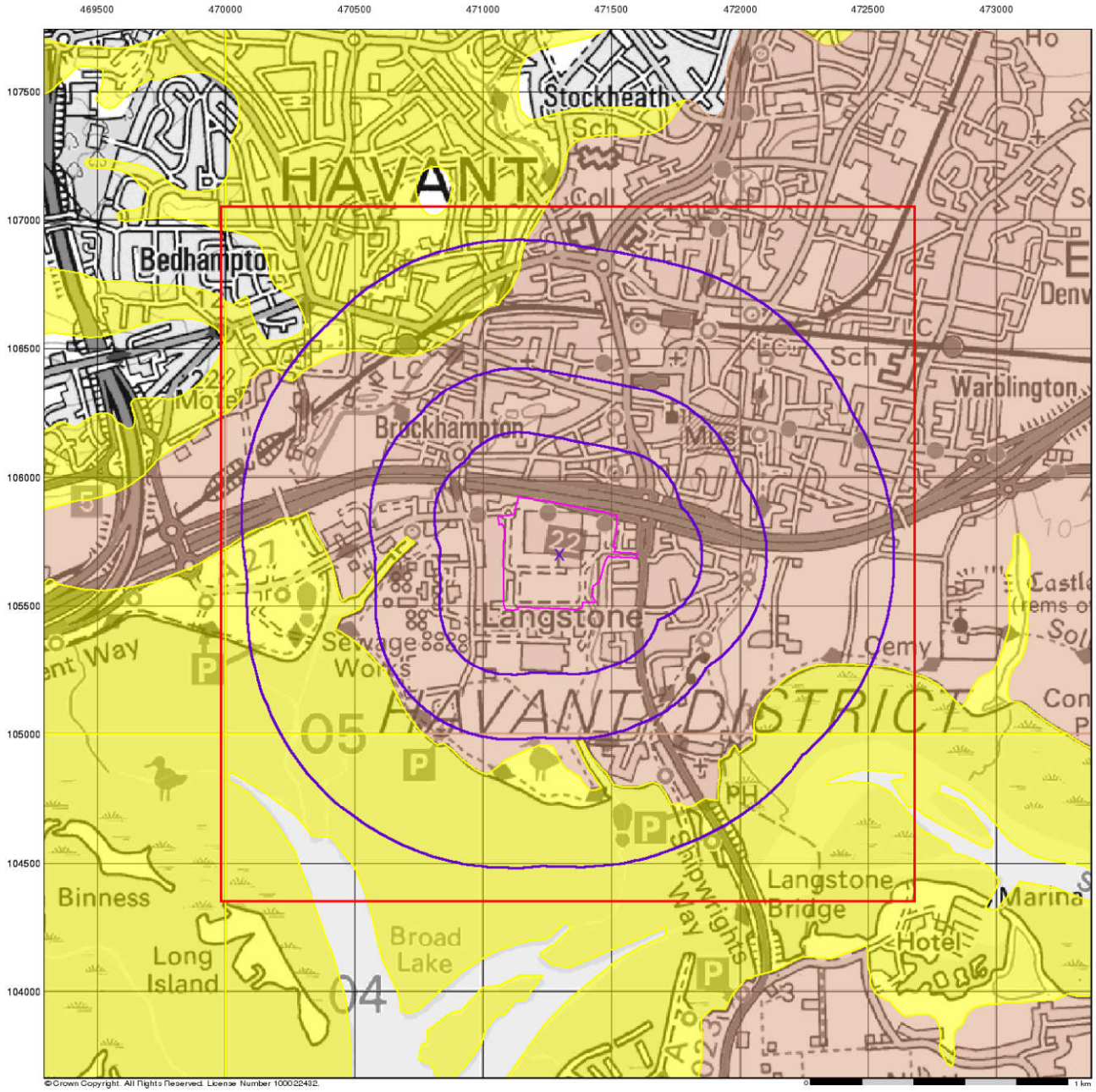
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Superficial Aquifer Designation

General

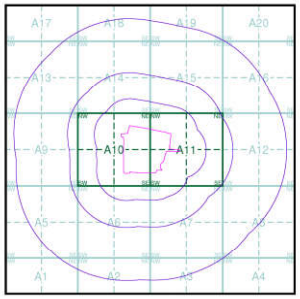
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A

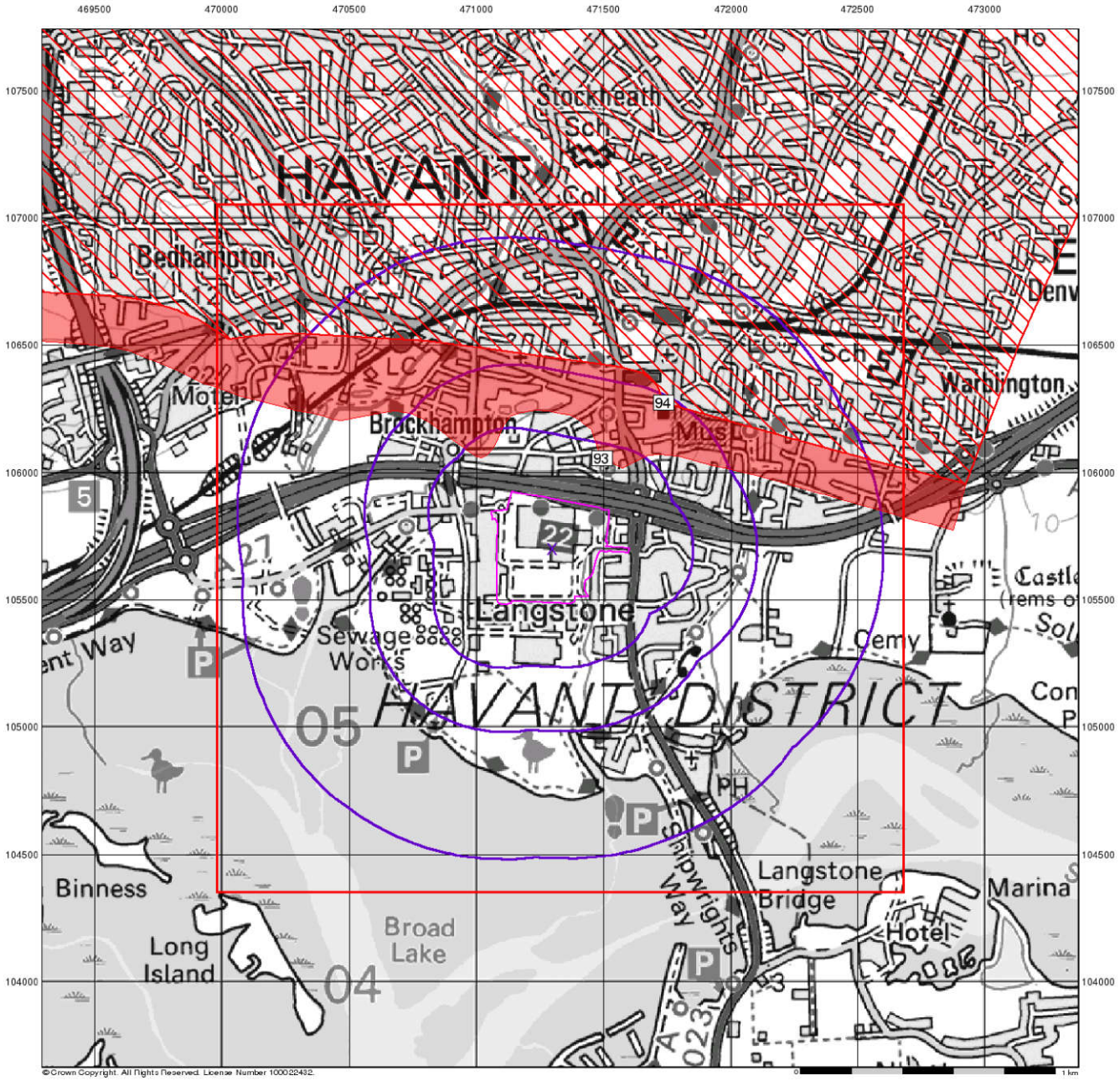


Order Details

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Slice:	A
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Site Details

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Source Protection Zones

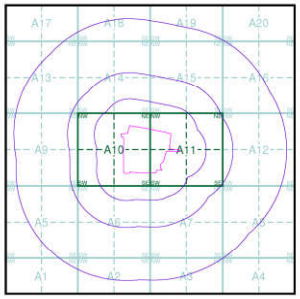
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



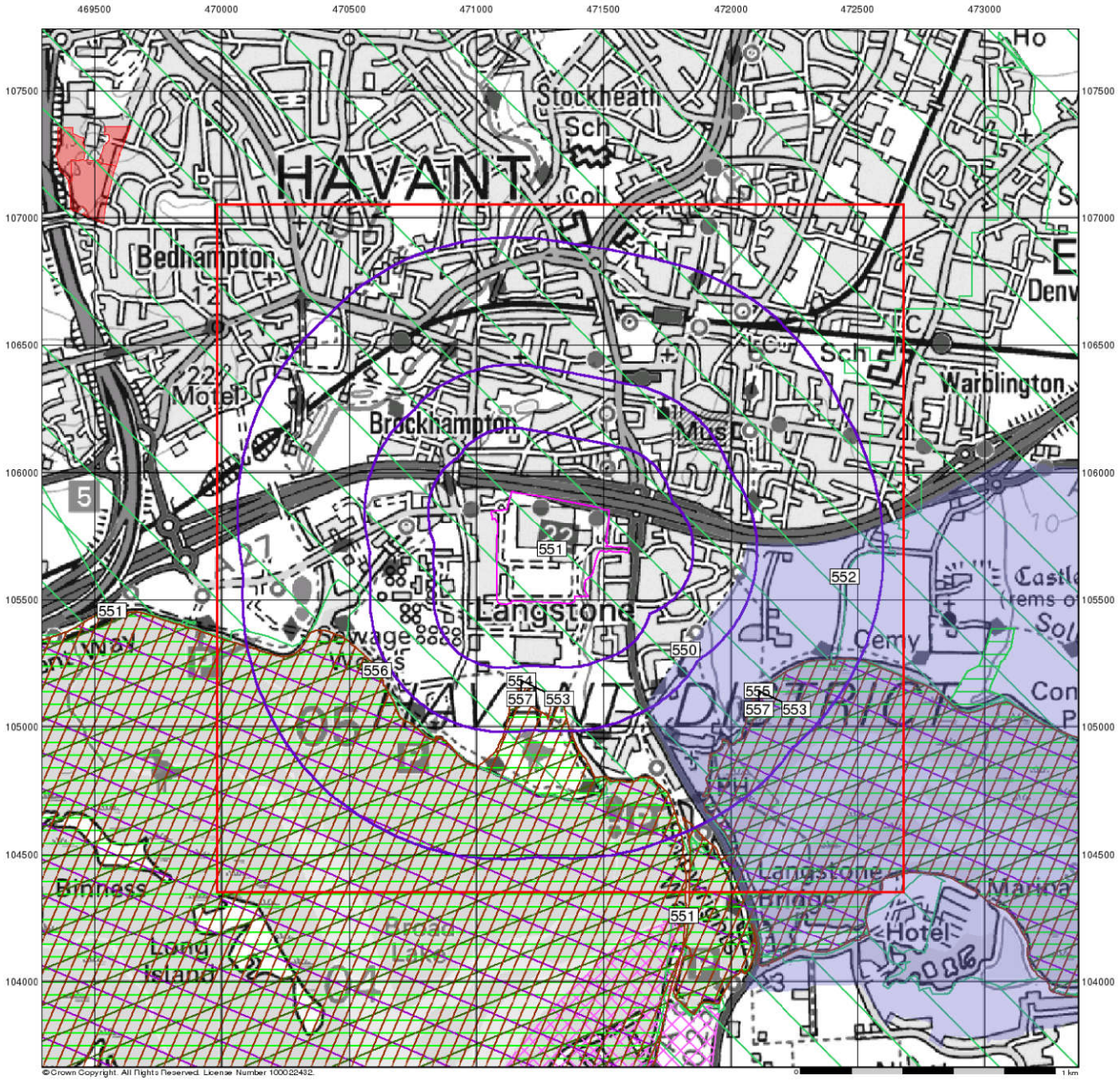
Order Details

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Sensitive Land Uses

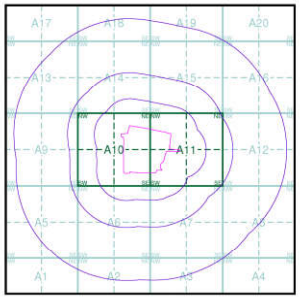
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



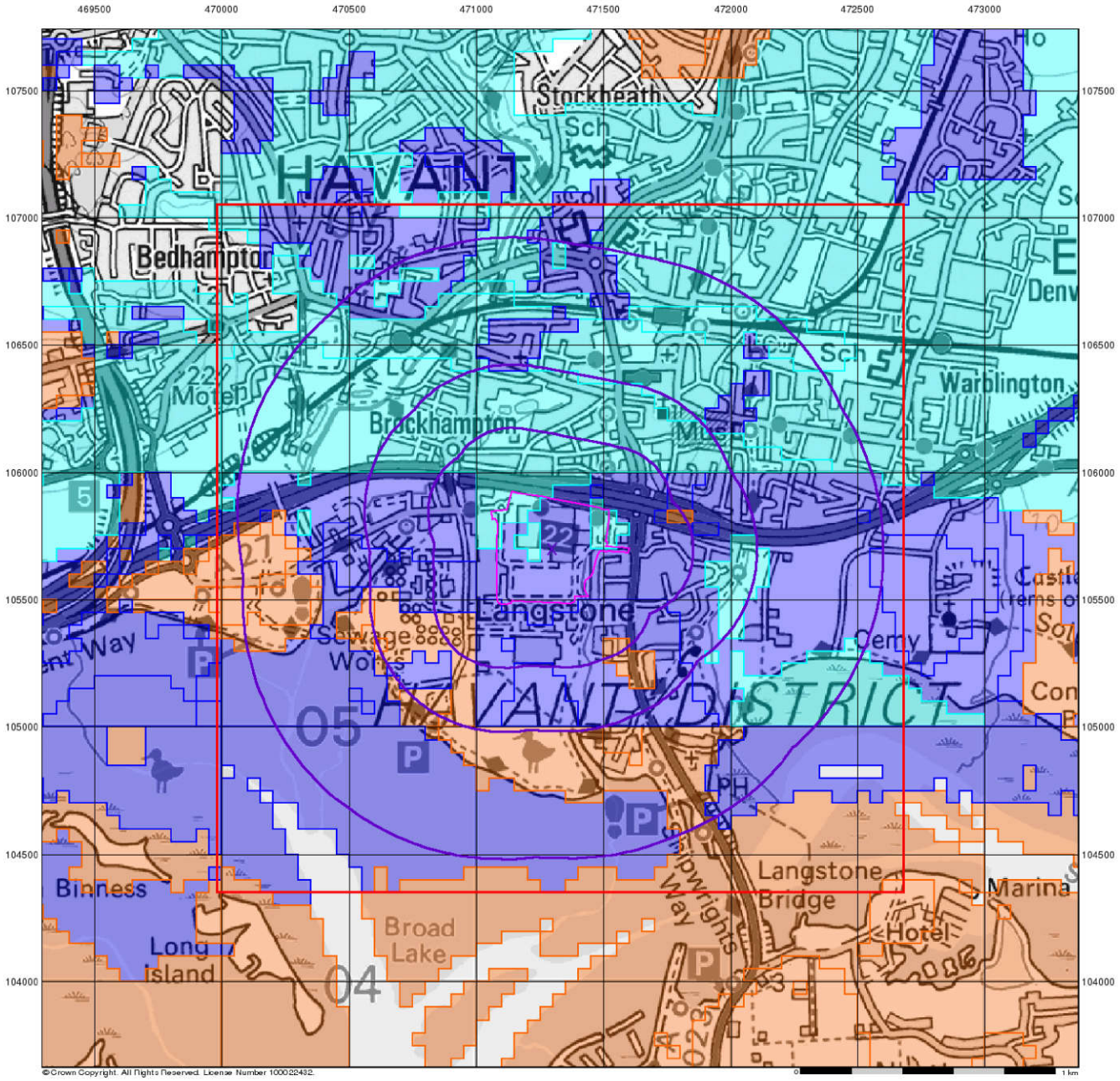
Order Details

Order Number:	203439487_1_1
Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
Site Area (Ha):	16.11
Search Buffer (m):	1000

Site Details

Hydroco, Langstone Technology Park 2b, Langstone Road, HAVANT, PO9 1SA

Landmark® INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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BGS Flood GFS Data

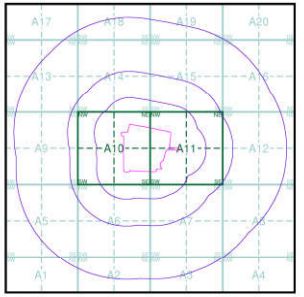
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	203439487_1_1
Customer Ref:	19-0687.01
National Grid Reference:	471300, 105700
Slice:	A
Site Area (Ha):	16.11
Search Buffer (m):	1000

Site Details

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Landmark® INFORMATION GROUP
Tel: 0844 844 9952
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Appendix F – Planning Information

Havant BOROUGH COUNCIL

Public Service Plaza
Civic Centre Road
Havant
Hampshire PO9 2AX

T 023 9247 4174
F 023 9248 0263

www.havant.gov.uk

Mr D Harris
Fasset Limited
B41 Langstone Technology Park
Langstone Road
Havant
PO91SA

The Town and Country Planning (Development Management Procedure) (England) Order 2015
Grant of Planning Permission

Application Number: APP/15/00484
Site Address: Building 41, Langstone Technology Park, 2B Langstone Road, Havant, PO9 1SA
Proposal: Change of use from store to gym facility.

Further to your application received on 01 May 2015, which was valid from 15 May 2015, Havant Borough Council, as Local Planning Authority **Grants Planning Permission** for the above proposal in accordance with the submitted plans and particulars as detailed below.

This permission is subject to compliance with:

(i) The plans and other documents submitted with regard to your application; and

(ii) The following conditions:

Conditions:

1 The development hereby permitted shall be begun before the expiration of 3 years from the date on which this planning permission was granted.
Reason: To comply with Section 51 of the Planning and Compulsory Purchase Act 2004.

2 Between the hours of 0700 and 0930 Monday to Friday, users of the gym hereby permitted, that are not employed on the Langstone Technology Park, shall only take vehicular access to the site from the western access from Brookside Road. The management measures included within the application, including signage within the car park, inclusion of the requirement in the terms of membership and newsletters/communications shall be implemented prior to the use of the gym being commenced, and shall continue to be undertaken at all times thereafter.
Reason: To ensure there will be limited traffic impact on the adjacent highway network in the interests of highway safety and having due regard to policies CS16, CS20 and DM14 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework 2012.

3 The development shall not be brought into use until space for the loading, unloading and parking of vehicles has been provided within the site, surfaced and marked out in accordance with the approved details. Such areas shall thereafter be retained and used solely for those purposes.
Reason: In the interests of highway safety and having due regard to policy DM14 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework 2012.

4 The development hereby permitted shall be carried out in accordance with the following approved documents and plans:
Application form
Development Planning Statement including following appendices
1: Utilities
2: Site layout
3: Envirochem Analysis Report dated 27th February 2015
4: Landscaping
5: Lighting
6: Car parking
7: Site Map (Revision A)
8. Existing layout
9. Existing Elevations
10. New Elevations, Sections and Details
11. Proposed Layout
Email from Danny Harris of 15th June 2015
Two emails from Danny Harris dated 17th June 2015
Reason: - To ensure provision of a satisfactory development.

Other Important Information:

(1) This notice only relates to the decision of Havant Borough Council as Local Planning Authority under the Town and Country Planning Acts. It does not relate to any other application that may be required under the Building Regulations or under any other Act, Regulation, Byelaw or Order where the Council's approval may be needed. For further guidance as to the need for consent under the Building Regulations please phone 023 9244 6571.

(2) Your attention is drawn to the attached information regarding firstly your right to appeal to the Planning Inspectorate, if you are aggrieved by the Council's decision, and secondly the rights of an owner to, in certain circumstances serve a purchase notice on the Council. See www.planningportal.gov.uk/pcs.

(3) Any failure to adhere to the details of the approved plans, and other documents or to comply with any conditions listed above may lead to enforcement action being taken by the Council. If you wish to depart from the approved details or conditions in any way you should contact the Planning and Development service at the Plaza or by telephoning 023 9244 6015.

(1) In accordance with paragraphs 186 and 187 of the NPPF Havant Borough Council (HBC) takes a positive and proactive approach and works with applicants/agents on development proposals in a manner focused on solutions by:

- Offering a pre-application advice service, and
- Updating you of any issues that may arise in the processing of your application and where possible suggesting solutions, and,

In this instance:

- You were updated about issues after the initial site visit,

Andrew Biltcliffe

Andrew Biltcliffe
Executive Planning Service Manager

09 July 2015

HAVANT BOROUGH COUNCIL

Town & Country Planning Act 1990

Consultation on Planning Application

MEMORANDUM

From:	**Environmental Health**	**To:**	**Development Control**
Our Ref:	CONS/15/00702	**Your Ref:**	APP/15/00484
EH Case Officer Extn:	44 6677	**Date:**	02 July 2015

DC Case Officer: Sally Smith
DC Case Officer Extn: 44 6522
Application Number: APP/15/00484
Site Address: 2B Langstone Road, Havant, PO9 1SA
Proposed Development: Change of use from store to gym facility.

Observations / Comments:

Following my previous consultation response, I have had opportunity to inspect the features at the site that were a cause for concern with respect to potential sources of local (on site) gross contamination, and would like to make an additional / updated response. Comments below will relate to features identified within the original response as being of concern, or subject to uncertainty.

Summary

Following the site visit, I have no objection to the current application, recommend no conditions in connection with the assessment of contamination risk.

Contamination cannot be entirely ruled out, and conditions may be appropriate for future schemes brought forward relating to this area of the site, or elsewhere within the wider technology park site.

Site inspection notes & additional comments

During the visit it was established that all storage facilities were subject to appropriate, well constructed secondary-containment that remains in good condition & apparrently sound. There is no visual evidence of localised spillages, and the facilities & procedures for draining the bund areas appear to have been appropriate, demonstrating good environmental practice.

The operational period of the bulk fuel tanks was <25 years, well within the operational design life of tanks of this type - making containment failure less likely (especially when considered against the construction quality & condition of secondary containment). A similar conclusion can reasonably be reached with respect to the flammable (& other hazardous) chemical storage areas, which similarly benefited from secondary containment & other spill control measures.

It has also become clear that the building previously occupying land within the footprint of

Building 41 (southern end) was used for non-contaminating recreational purposes, and that the process previously undertaken within B41 was a relatively low risk industrial activity (production of de-ionized water) that has since been fully decommissioned. This process is unlikely to have involved use of persistent, volatile &/or toxic materials that would be of greatest relevance to general exposure under the proposed land use scenario.

Envirochem samples submitted confirm that liquids present within bunds, sumps, and other drainage / spill control features at the time of sampling are free from hazardous concentrations of contaminants. This would be expected however given both the throughput of rainwater (e.g from open bunds) and the period of time since the fuel & flammables storage areas were last operational. Significant concentrations of determinands in the Envirochem samples would have been a cause for concern, but given the purpose of the features sampled, would not necessarily have been indicative of likely soil contamination. In this way, the Envirochem samples cannot be taken to relate to directly to soil quality or likely levels of contamination exposure.

A degree of soil contamination associated with the storage & handling of potentially hazardous liquids within this area of the site cannot be entirely ruled out. It remains possible that contamination could have occurred, however contamination that is both significant & widespread is considered a low probability given the control measures in place, and the current condition of secondary containment structures.

Contamination associated with adjacent landuses (e.g. nearby plastics moulding) also remains a possibility, though it is accepted that the Council is not currently aware of any physical indication of contamination.

I understand that the requirement for intrusive groundworks under this application will be very limited, and so the probability of encountering contamination (if present) would be similarly low. I also understand that the property remains within the wider site freehold, simplifying any liability issues and being facilitative of action to appropriately deal with contamination in future if evidence of a significant contamination issue is subsequently identified.

The above factors are considered to be reduce the degree of risk associated with the potentially contaminating features in the vicinity of- & within- building 41.

Conclusions

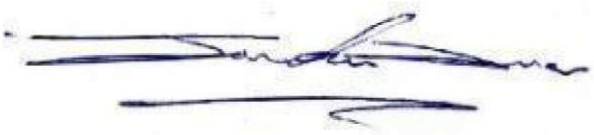
The imposition of a precautionary requirement for site investigation is considered to be disproportionate for the current application for the following reasons:

- proposals relate to a commercial change of use (albeit with elevated sensitivity to contamination)
- delivery of the proposed scheme would not involve substantial groundworks, or removal of the existing building superstructure (i.e. there is no 'golden opportunity' to investigate & address possible/assumed contamination risk that would be difficult to access in future)
- Risk of release to environment of hazardous materials from the identified storage facilities on site is considered to be substantially lower than previously assumed
- Risk from industrial processes undertaken within building 41 is considered to be substantially lower than could have been the case under a 'worst-case' scenario (previous working assumption in the absence of specific information).

It is further considered that an environmental desk study or site environmental audit is unlikely to provide substantive new information in relation to risks at the site.

As outlined above however, while there are good reasons to suspect a lower risk from on-site sources than might have been previously expected, the risk of contamination cannot be entirely ruled out and it may therefore be appropriate to impose requirements to confirm (& if necessary, address) contamination risks in future - for example if this area of the site is to be comprehensively redeveloped.

I offer no adverse comment in relation to the current scheme.



Mr. Jonathan Driver
Environmental Control Officer

ENVIROCHEM
Analytical Laboratories Ltd.
12 The Gardens
Broadcut, Fareham
Hampshire
PO16 8SS.

Tel: (01329) 287777
Fax: (01329) 287755
www.envirochem.co.uk
lab@envirochem.co.uk

UKAS TESTING 1227

Our Ref: 1400978
Your Ref:

Analysis Report

Client: Fasset Business and Property Solutions
Langstone Technology Park,
Langstone Road,
Havant,
Hampshire,
PO9 1SA

Sample Details: Five samples of water for analysis for WAC analytes.

Date report issued: 27th February 2015

Number of pages (including this header): Six

Accreditation
All analytes marked ^{M} have been analysed under the scope of our MCERTS accreditation
All analytes marked ^{U} have been analysed under the scope of our UKAS accreditation
All analytes marked ^{m} have been subcontracted and analysed under the scope of their MCERTS accreditation
All analytes marked ^{u} have been subcontracted and analysed under the scope of their UKAS accreditation

Signed on behalf of Envirochem by an authorised signatory

Dr. Duncan Russell
(Senior Analyst)

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

ENVIROCHEM
Analytical Laboratories Ltd.
www.envirochem.co.uk
lab@envirochem.co.uk

UKAS TESTING 1227

WATER ANALYSIS

Client:	Fasset, Langstone Technology Park, Havant.	**Site:**	Building 41
Sampled By:	J. Mackay (Envirochem)	**Sample details :**	Water within reservoir
Date Sampled:	13th February 2015	**Date Received :**	13th February 2015
Date Analysis Started:	17th February 2015	**Date Completed:**	23rd February 2015
Sample Description:	Wastewater	**Analyst:**	S Bessant, K. O'Connor, E. Hoque A. Aghajani & K. Muzan

Table 1: parameters determined on water (all results in mg leached per l)

Analyte	Method	Sample Lab Ref: 1400978-che-1	*Landfill acceptance criteria for Inert waste*	*Effluent water*
Arsenic U	5.04, 6.08	< 0.02†	*0.5*	*1*
Antimony	5.04, 6.08	< 0.01	*0.06*	*3*
Barium U	5.04, 6.08	0.81†	*20*	—
Cadmium U	5.04, 6.08	< 0.002†	*0.04*	—
Chromium (total) U	5.04, 6.08	< 0.01†	*0.5*	*3*
Copper U	5.04, 6.08	0.017†	*2*	*3*
Lead U	5.04, 6.08	< 0.02†	*0.5*	*3*
Mercury U	5.04, 6.08	< 0.005†	*0.01*	—
Molybdenum	5.04, 6.08	< 0.2	*0.5*	*3*
Nickel U	5.04, 6.08	< 0.01†	*0.4*	*3*
Selenium	5.04, 6.08	< 0.02	*0.1*	*3*
Zinc U	5.04, 6.08	< 0.1†	*4*	*5*
Sulphate U	5.04, 6.02	5.4†	*0.3*	—
Fluoride U	5.04, 6.02	0.54†	*0.3*	*5*
Chloride U	5.04, 6.02	18†	*0.3*	—
Phenol index	colourimetric	< 0.1	*1*	*10*
pH (pH units) U	6.03	6.50†	*To be set*	*To be set*
Total dissolved solids	electrometric	178	*4000*	—
Mineral oil (C_{10} – C_{40})	6.04	< 0.2	*500*	*200*
BTEX	6.0	< 0.2	—	—
PAHs	6.11	< 1	—	—
Dissolved Organic Carbon (mg/L)	5.04, 6.07	15	*500*	--

All analytes marked U have been analysed under the scope of our UKAS accreditation

All results labelled with an asterisk (†) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

Comments: (comments are beyond the scope of UKAS accreditation)

Metals determined as soluble metals

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

WATER ANALYSIS

Client:	Fasset, Langstone Technology Park, Havant	**Site:**	Building 41
Sampled By:	J. Mackay (Envirochem)	**Sample details :**	Inside external tank
Date Sampled:	13th February 2015	**Date Received :**	13th February 2015
Date Analysis Started:	17th February 2015	**Date Completed:**	23rd February 2015
Sample Description:	Wastewater	**Analyst:**	S Bessant, K. O'Connor, E. Hoque A. Aghajani & K. Muzan

Table 1: parameters determined on water (all results in mg leached per l)

Analyte	Method	Sample Lab Ref: 1400978-che-2	*Landfill acceptance criteria for Inert waste*	*Effluent water*
Arsenic U	5.04, 6.08	< 0.02†	*0.5*	*1*
Antimony	5.04, 6.08	< 0.01	*0.06*	*3*
Barium U	5.04, 6.08	0.13†	*20*	—
Cadmium U	5.04, 6.08	< 0.002†	*0.04*	—
Chromium (total) U	5.04, 6.08	< 0.01†	*0.5*	*3*
Copper U	5.04, 6.08	0.07†	*2*	*3*
Lead U	5.04, 6.08	< 0.02†	*0.5*	*3*
Mercury U	5.04, 6.08	< 0.005†	*0.01*	—
Molybdenum	5.04, 6.08	< 0.2	*0.5*	*3*
Nickel U	5.04, 6.08	< 0.01†	*0.4*	*3*
Selenium	5.04, 6.08	< 0.02	*0.1*	*3*
Zinc U	5.04, 6.08	0.22†	*4*	*5*
Sulphate U	5.04, 6.02	4†	*0.3*	—
Fluoride U	5.04, 6.02	< 0.3†	*0.3*	*5*
Chloride U	5.04, 6.02	16†	*0.3*	—
Phenol index	colourimetric	0.34	*1*	*10*
pH (pH units) U	6.03	6.77†	*To be set*	*To be set*
Total dissolved solids	electrometric	106	*4000*	—
Mineral oil (C_{10} – C_{40})	6.04	< 0.2	*500*	*200*
BTEX	6.0	< 0.2	—	—
PAHs	6.11	< 0.1	—	—
Dissolved Organic Carbon (mg/L)	5.04, 6.07	18	*500*	--

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Comments: (comments are beyond the scope of UKAS accreditation)

Metals determined as soluble metals

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

WATER ANALYSIS

Client:	Fasset, Langstone Technology Park, Havant	**Site:**	Building 41
Sampled By:	J. Mackay (Envirochem)	**Sample details :**	Water within reservoir
Date Sampled:	13th February 2015	**Date Received :**	13th February 2015
Date Analysis Started:	17th February 2015	**Date Completed:**	23rd February 2015
Sample Description:	Wastewater	**Analyst:**	S Bessant, K. O'Connor, E. Hoque A. Aghajani & K. Muzan

Table 1: parameters determined on water (all results in mg leached per l)

Analyte	Method	Sample Lab Ref: 1400978-che-3	*Landfill acceptance criteria for Inert waste*	*Effluent water*
Arsenic U	5.04, 6.08	< 0.02†	*0.5*	*1*
Antimony	5.04, 6.08	< 0.01	*0.06*	*3*
Barium U	5.04, 6.08	0.115†	*20*	—
Cadmium U	5.04, 6.08	< 0.002†	*0.04*	—
Chromium (total) U	5.04, 6.08	< 0.01†	*0.5*	*3*
Copper U	5.04, 6.08	0.097†	*2*	*3*
Lead U	5.04, 6.08	< 0.02†	*0.5*	*3*
Mercury U	5.04, 6.08	< 0.005†	*0.01*	—
Molybdenum	5.04, 6.08	< 0.2	*0.5*	*3*
Nickel U	5.04, 6.08	< 0.01†	*0.4*	*3*
Selenium	5.04, 6.08	< 0.02	*0.1*	*3*
Zinc U	5.04, 6.08	0.232†	*4*	*5*
Sulphate U	5.04, 6.02	4†	*0.3*	—
Fluoride U	5.04, 6.02	< 0.3†	*0.3*	*5*
Chloride U	5.04, 6.02	16†	*0.3*	—
Phenol index	colourimetric	0.59	*1*	*10*
pH (pH units) U	6.03	6.89†	*To be set*	*To be set*
Total dissolved solids	electrometric	103	*4000*	—
Mineral oil (C_{10} – C_{40})	6.04	< 0.2	*500*	*200*
BTEX	6.0	< 0.2	—	—
PAHs	6.11	< 0.1	—	—
Dissolved Organic Carbon (mg/L)	5.04, 6.07	15	*500*	--

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Comments: (comments are beyond the scope of UKAS accreditation)

Metals determined as soluble metals

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

WATER ANALYSIS

Client:	Fasset, Langstone Technology Park	**Site:**	Building 41
Sampled By:	J. Mackay (Envirochem)	**Sample details :**	Water surrounding external tank
Date Sampled:	13th February 2015	**Date Received :**	13th February 2015
Date Analysis Started:	17th February 2015	**Date Completed:**	23rd February 2015
Sample Description:	Wastewater	**Analyst:**	S Bessant, K. O'Connor, E. Hoque A. Aghajani & K. Muzan

Table 1: parameters determined on water (all results in mg leached per l)

Analyte	Method	Sample Lab Ref: 1400978-che-4	*Landfill acceptance criteria for Inert waste*	*Effluent water*
Arsenic U	5.04, 6.08	< 0.02†	*0.5*	*1*
Antimony	5.04, 6.08	< 0.01	*0.06*	*3*
Barium U	5.04, 6.08	0.77†	*20*	—
Cadmium U	5.04, 6.08	< 0.002†	*0.04*	—
Chromium (total) U	5.04, 6.08	< 0.01†	*0.5*	*3*
Copper U	5.04, 6.08	0.016†	*2*	*3*
Lead U	5.04, 6.08	< 0.02†	*0.5*	*3*
Mercury U	5.04, 6.08	< 0.005†	*0.01*	—
Molybdenum	5.04, 6.08	< 0.2	*0.5*	*3*
Nickel U	5.04, 6.08	< 0.01†	*0.4*	*3*
Selenium	5.04, 6.08	< 0.02	*0.1*	*3*
Zinc U	5.04, 6.08	0.12†	*4*	*5*
Sulphate U	5.04, 6.02	5†	*0.3*	—
Fluoride U	5.04, 6.02	0.5†	*0.3*	*5*
Chloride U	5.04, 6.02	18†	*0.3*	—
Phenol index	colourimetric	0.84	*1*	*10*
pH (pH units) U	6.03	6.84†	*To be set*	*To be set*
Total dissolved solids	electrometric	170	*4000*	—
Mineral oil (C_{10} – C_{40})	6.04	< 0.2	*500*	*200*
BTEX	6.0	< 0.2	—	—
PAHs	6.11	< 0.1	—	—
Dissolved Organic Carbon (mg/L)	5.04, 6.07	15	*500*	--

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Comments: (comments are beyond the scope of UKAS accreditation)

Metals determined as soluble metals

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

WATER ANALYSIS

Client:	Fasset, Langstone Technology Park	**Site:**	Building 41
Sampled By:	J. Mackay (Envirochem)	**Sample details :**	Drain adjacent chemical plant
Date Sampled:	13th February 2015	**Date Received :**	13th February 2015
Date Analysis Started:	17th February 2015	**Date Completed:**	23rd February 2015
Sample Description:	Wastewater	**Analyst:**	S Bessant, K. O'Connor, E. Hoque A. Aghajani & K. Muzan

Table 1: parameters determined on water (all results in mg leached per l)

Analyte	Method	Sample Lab Ref: 1400978-che-5	*Landfill acceptance criteria for Inert waste*	*Effluent water*
Arsenic U	5.04, 6.08	< 0.02†	*0.5*	*1*
Antimony	5.04, 6.08	< 0.01	*0.06*	*3*
Barium U	5.04, 6.08	0.09†	*20*	—
Cadmium U	5.04, 6.08	< 0.002†	*0.04*	—
Chromium (total) U	5.04, 6.08	< 0.01†	*0.5*	*3*
Copper U	5.04, 6.08	0.015†	*2*	*3*
Lead U	5.04, 6.08	< 0.02†	*0.5*	*3*
Mercury U	5.04, 6.08	< 0.005†	*0.01*	—
Molybdenum	5.04, 6.08	< 0.2	*0.5*	*3*
Nickel U	5.04, 6.08	< 0.01†	*0.4*	*3*
Selenium	5.04, 6.08	< 0.02	*0.1*	*3*
Zinc U	5.04, 6.08	0.52†	*4*	*5*
Sulphate U	5.04, 6.02	7†	*0.3*	—
Fluoride U	5.04, 6.02	< 0.3†	*0.3*	*5*
Chloride U	5.04, 6.02	58†	*0.3*	—
Phenol index	colourimetric	1.3	*1*	*10*
pH (pH units) U	6.03	7.17†	*To be set*	*To be set*
Total dissolved solids	electrometric	145	*4000*	—
Mineral oil (C_{10} – C_{40})	6.04	< 0.2	*500*	*200*
BTEX	6.0	< 0.2	—	—
PAHs	6.11	< 0.1	—	—
Dissolved Organic Carbon (mg/L)	5.04, 6.07	16	*500*	--

All analytes marked U have been analysed under the scope of our UKAS accreditation

All results labelled with an asterisk (†) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

Comments: (comments are beyond the scope of UKAS accreditation)

Metals determined as soluble metals

Reg. No. 2378228 England. Registered Office: Envirochem, 12 The Gardens, Broadcut, Fareham, Hampshire, PO16 8SS.

Havant
BOROUGH COUNCIL

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Civic Centre Road
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Mr H Asson
Rapleys LLP
33 Jermyn Street
London
SW1Y 6DN

For: A.G Langstone BV and Trinity Investment Management

The Town and Country Planning (Development Management Procedure) (England) Order 2015
Grant of Planning Permission

Application Number: APP/19/00703
Site Address: Langstone Technology Park, 2B Langstone Road, Havant, PO9 1SA
Proposal: Part-demolition of Building 1000 and associated works; the erection of new flexible use industrial units; and a new parking layout with associated works to layout and access and felling of two trees subject to a Tree Preservation Order (Norway Maples).

Further to your application received on 11 July 2019, which was valid from 02 August 2019 Havant Borough Council, as Local Planning Authority **Grants Planning Permission** for the above proposal in accordance with the submitted plans and particulars as detailed below.

This permission is subject to compliance with:

(i) The plans and other documents submitted with regard to your application; and

(ii) The following conditions:

Conditions:

1 The development must be begun not later than three years beginning with the date of this permission.
Reason: To comply with the requirements of Section 91 of the Town and Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

2 The development hereby permitted shall be carried out in accordance with the following approved plans:

Plans

Site Location Plan Drawing No.0100 Rev C
Site Plan Drawing No. 0110 Rev F
Site Plan with Footpaths Drawing No. 0111 Rev A
Proposed Layout Plan Opt 02 Drawing No.0152 Rev N
Car Park Layouts Sheet 1 Drawing No. 0155 Rev E

Car Park Layouts Sheet 2 Drawing No. 0156 Rev E
Parking Access and Management Drawing No. 0158 Rev A
Proposed Ground Floor Plan (B1000) Drawing No. 4046A 200 Rev F
Units 01-05 Floor Plans Drawing No. 4046C 0200 Rev D
Units 01-05 Elevations and Typical Section Drawing No. 0205 Rev E
Units 06-09 Floor Plans Drawing No. 0210 Rev F
Units 06-09 Roof Plan Drawing No. 0211 Rev E
Units 06-09 Elevations and Typical Section Drawing No. 0215 Rev D
Units 10-12 Floor Plans Drawing No. 0220 Rev F
Units 10-12 Roof Plan Drawing No. 0221 Rev D
Units 10-12 Elevations and Typical Section Drawing No. 0225 Rev D
Sit Section and Elevation Analysis Drawing No. 0230
Proposed Elevations Drawing No. 300 Rev A
Drainage Strategy General Arrangement Sheet 1 of 2 Drawing No. 4400 Rev P1
Drainage Strategy General Arrangement Sheet 2 of 2 Drawing No. 4401 Rev P1
Summary of Existing Surface Water Drainage for Proposed Development Areas Drawing No. 4600 Rev P1
100 Year Modelled Flood Levels – Created 16 September 2019
Indicative Drainage Details Sheet 1 of 2 Drawing No. 400410 Rev P1
Indicative Drainage Details Sheet 2 of 2 Drawing No. 400411 Rev P1

Documents
Design and Access Statement July 2019
Design and Access Statement Addendum October 2019
Planning Statement Ref 18-02501 dated 5 July 2019
Transport Assessment 20428-04c 3rd July 2019
Framework Travel Plan SKP/20428-05e Framework TP 11th December 2019
Response to Consultees on transport and highways matters 23rd October 2019 RJM/20428-06e Response
Further Response to Hampshire County Council re Highways Matters 20428-07b 4th March 2020
Non Technical Summary (Highways) 20428-08a 7th April 2020
Phase 1 Habitat and Species Survey Project No P3133 Rev 01 28th June 2019
Bat Emergence Survey Report Project No.: P3133 28th June 2019
Biodiversity Enhancement Plan Project No: P3133 Rev 1 dated 22nd October 2019
Heritage Impact Assessment Ref: edp5537_r002b June 2019
Preliminary Geo-Environmental Risk Assessment Project No. 19-0687.01 Issue No. 2 July 2019
Flood Risk Assessment and SUDS Strategy Ref 8/1982 Rev C 2nd July 2019
Drainage and Flood Risk Assessment Parts 2, 3 and 4
Clancy Consulting Letter Ref. 8/1982/LLFA dated 23rd September 2019
Clancy Consulting Letter Ref. 9/1982/FLOOD2 dated 7th October 2019
Clancy Consulting Letter Ref. 8/1982/FLOOD dated 29th August 2019
Calculation Package and Design Philosophy for Drainage Ref: 8/1982 Rev B 25th October 2019
Manhole Schedule Area 1 Drawing No. 4415 Rev P1
Manhole Schedule Area 2 Drawing No..4416 Rev P1
Manhole Schedule Area 3 Drawing No. 4417 Rev P1
Manhole Schedule Area 4 Drawing No. 4418 Rev P1
BREEAM Pre-assessment (New Industrial) Ref: 5549-CBC-RGV-RP-Z-001-P02 Rev 2 26th June 2019
BREEAM Pre-Assessment (Building B1000) Ref: 5548-CBC-RGV-RP-Z-002-P02 Rev. 2 26th June 2019
BREEAM Rating Doc Ref. 5549 Design note – BREEAM rating Rev 2 23rd October 2019

Air Quality Assessment Ref AQ107578R1 October 2019
Acoustic Report – Preliminary Planning Compliance Review Report 18980.PPCR.01 Rev D
Arboricultural Method Statement Ref. 1087.bjh.Sept19
Tree Removal Note 2nd August 2019
Tree Protection Plans
Tree Constraints Plans
Rapleys Letter Ref HJOA/18-02501 (Parking/Access and Protected Trees etc) 19th December 2019

The Following were considered in relation to the application:
Industrial Park Signboard Drawing No. SK (Signage likely to require Advertisement Consent)
Artistic Impression Drawing No. 301
Marketing Strategy Report Area 1, 2 and 3 Building 1000 Ref.ANH/cec
Reason: - To ensure provision of a satisfactory development.

3 No development shall take place until plans and particulars setting out a phased programme for implementation of the development have been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be carried out in accordance with the approved phasing programme unless an alternative is first agreed in writing with the Local Planning Authority.
Reason: To ensure adequate parking is provided on site in advance of the first use of the proposed new flexible use industrial units and that adequate foul drainage capacity is available having due regard to policies CS15 and DM14 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

4 No development shall take place on a phase of the development until details of existing and finished floor and site levels relative to previously agreed off-site datum point(s) for that phase have been submitted to and approved in writing by the Local Planning Authority. The development shall be undertaken in accordance with the approved details.
Reason: To ensure that the development has an acceptable impact on the character and appearance of the area having due regard to policies CS16 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

5 No development shall take place on a phase of the development until all trees that are to be retained within or adjacent to the part of the site subject to that phase have been enclosed with temporary protective fencing in accordance with BS:5837:2012 'Trees in relation to design, demolition and construction. Recommendations'. The fencing shall be retained throughout the period of works relative to that phase and no activity prohibited by BS:5837:2012 shall take place within such protective fencing during the construction period.
Reason: To safeguard the continued health and presence of such existing vegetation and protect the amenities of the locality and having due regard to policies CS11 and CS16 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

6 No development shall take place on a phase of the development until plans and particulars specifying the following matters relative to that phase have been submitted to and approved in writing by the Local Planning Authority (in consultation with Hampshire County Council Highways Authority):

(i) A Construction Traffic Management Plan. This shall include construction traffic routes and their management and control, parking and turning provision to be made on site, measures to prevent mud

being deposited on the highway, adequate provision for addressing any abnormal wear and tear to the highway, and a programme for construction.

(ii) The provision to be made within the site for contractors' vehicle parking during site clearance and construction of the development;

(iii) The provision to be made within the site for a material storage compound during site clearance and construction of the development.

Thereafter, throughout such site clearance and implementation of the relevant phase of development, the approved construction traffic management plan shall be complied with and the approved parking provision and storage compound shall be kept available and used only as such.
Reason: To safeguard the amenities of the locality and in the interests of highway safety and having due regard to policies CS16, CS20, DM10 and DM12 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

7 With the exception of demolition works, no development hereby permitted shall commence on a phase of the development until plans and particulars specifying the layout, depth and capacity of all foul and surface water drains and sewers proposed to serve the same, and details of any other proposed ancillary drainage works/plant (e.g. pumping stations) for that phase have been submitted to and approved in writing by the Local Planning Authority. The surface water drainage scheme for each phase shall specify the measures for ensuring that potential pollutants from the site do not impact the wider water environment. Unless agreed otherwise in writing by the Local Planning Authority, the relevant phase of the development hereby permitted shall not be brought into use prior to the completion of the implementation of all such drainage provision for that phase in full accordance with such plans and particulars as are thus approved by the Authority.
Reason: To safeguard the amenities of the locality and ensure that all such drainage provision is constructed to an appropriate standard and quality to reduce flood risk and protect the wider water environment having due regard to policies CS15, CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

8 The development hereby permitted shall be carried out in accordance with the Biodiversity Enhancement Plan (The Ecology Co-op, October 2019). In addition, prior to the commencement of developing the new industrial units full details of the transplantation of the species-rich grassland containing orchid species and the long term management and maintenance of the translocation area shall be submitted to and approved in writing by the Local Planning. The translocation shall take place in accordance with timing provisions as may be approved as part of the details. The translocation process itself and subsequent management and maintenance of the translocation site shall thereafter take place in accordance with the approved management and maintenance details. The details of the translocation area and its management and maintenance shall also be shown on the detailed landscaping plan required in accordance with condition No.13.
Reason: In the interests of biodiversity and the protection of habitat having due regard to policies CS11 and DM8 of the Havant Borough Local Plan (Core Strategy) 2011 the Wildlife and Countryside Act 1981 (as amended) and the National Planning Policy Framework.

9 Prior to the commencement of any specific phase of development approved by this planning permission (other than demolition, site clearance, or any other date or stage in development as may be agreed in writing with the Local Planning Authority), an

assessment of the nature and extent of contamination at the relevant part of the site, whether originating from within or outside the curtilage, shall be submitted to and approved in writing by the Local Planning Authority.

The assessment may comprise separate reports as appropriate, but shall be undertaken by competent persons and unless specifically excluded in writing by the Local Planning Authority, shall include;

1) An intrusive site investigation based on the proposals outlined within the Preliminary Geo-Environmental Risk Assessment Re'-19-0687.01 (section 6.0); to provide sufficient data and information to adequately identify & characterise any physical contamination on or affecting the site, and to inform an appropriate assessment of the risks to all identified receptors.

2) The results of an appropriate risk assessment based upon (1), and where unacceptable risks are identified, a Remediation Strategy that includes;

- appropriately considered remedial objectives,
- an appraisal of remedial &/or risk mitigation options, having due regard to sustainability, and;
- clearly defined proposals for mitigation of the identified risks, and;

3) A verification plan providing details of the data that will be collected in order to
demonstrate that the works set out any Remediation Strategy required under (2) are
complete, identifying any requirements for longer-term monitoring of pollutant linkages, maintenance of engineered mitigation measures, and arrangements for
contingency action.

All elements shall be adhered to unless agreed in writing by the Local Planning Authority.
Reason: Having due regard to policies CS11 and DM10 of the Havant Borough Adopted Core Strategy (2011) and DM17 of the Havant Borough Local Plan (Allocations) (2014) and the National Planning Framework, Contamination may be present at the site as a result of previous land uses (& / or activities) on site and in the vicinity, that could pose a risk groundwater & local surface waters (ecology), to the proposed buildings, and future occupiers of the site.

10 Prior to the commencement on a phase of the development (excluding demolition and temporary works), a Draft Design Stage Assessment demonstrating that the relevant part of the development will achieve at minimum 'Very Good' against the BREEAM Standard, shall be submitted to and agreed in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.
Reason: To ensure the development contributes to sustainable construction in accordance with policy CS4 of the Havant Borough Local Plan (Core Strategy) 2011.

11 Prior to the commencement of the new industrial units full details of the Electrical Vehicle (EV) Charging points, shall be submitted to and approved in writing by the Local Planning Authority. The details shall demonstrate that EV charging points are provided for the new car parking areas and that the development will accommodate 24 EV charging points. The details shall include the location of the EV charging points and a full specification of the materials to be used externally on the Charging points. Only the materials so approved shall be used, in accordance with any terms of such approval.
Reason: To ensure that the development provides appropriate facilities for Electric Vehicles in the interests of the environment, air quality and that the appearance of the

development is satisfactory having due regard to policies CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and Policy IN3 of the Pre-Submission Havant Borough Local Plan 2036 and the National Planning Policy Framework

12 Prior to the commencement of any phase of the development measures relative to that phase for the protection of public sewers within 5 metres of any work being carried out shall be submitted to and approved in writing by the Local Planning Authority in consultation with Southern Water. The development shall thereafter be carried out in accordance with the approved measures.
Reason: To ensure the protection of drainage apparatus having due regard to policies CS15 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

13 With the exception of demolition and temporary works, no development hereby permitted shall be commenced on any phase until a more detailed soft landscaping scheme for all open parts of the relevant phase not proposed to be hardsurfaced has been submitted to and approved in writing by the Local Planning Authority. Such scheme shall specify the proposed finished ground levels in relation to the existing levels, the distribution and species of ground cover to be planted, the positions, species and planting sizes of the trees and shrubs to be planted and/or retained, bulbs and any areas of turfing and seeding and timing provisions for completion of the implementation of all such landscaping works.
The details shall also specify the transplantation area of the species-rich grassland containing orchid species and the long term management and maintenance proposed.

The implementation of all such approved landscaping shall be completed in full accordance with such approved timing provisions. Any tree or shrub planted or retained as part of such approved landscaping scheme which dies or is otherwise removed within the first 5 years shall be replaced with another of the same species and size in the same position during the first available planting season.
Reason: To ensure the appearance of the development is satisfactory and having due regard to policies CS11, CS16 and DM8 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

14 With the exception of demolition and temporary works, no development hereby permitted shall commence on any phase until a specification of the materials to be used for the surfacing of all open parts of the site within that phase proposed to be hardsurfaced has been submitted to and approved in writing by the Local Planning Authority. The submitted details shall include:

fully annotated plans at sufficient scale that comprise the proposed range of coloured and textured surfacing treatments, which identify:

- hard surfacing material type / product reference and colour
- laying bond
- edging or kerb detail / type
- Further details on building material specification for the development requiring submission including material type, product reference and colour

The development hereby permitted shall not be brought into use until the implementation of all such hardsurfacing has been completed in full accordance with that specification.

Reason: In the interests of the amenities of the locality and having due regard to policies CS16, and DM8 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

15 Notwithstanding any description of materials in the application, with the exception of demolition and temporary works, no development shall take place until samples or a full specification of the materials to be used externally on the building(s) within that phase have been submitted to and approved in writing by the Local Planning Authority. Such details shall include the type, colour and texture of the materials. Only the materials so approved shall be used, in accordance with any terms of such approval.
Reason: In the interests of the amenities of the locality and having due regard to policy CS16 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

16 Prior to the occupation of any relevant phase of the permitted development, any verification report for that phase required in accordance with condition 9 shall be submitted to and approved in writing by the Local Planning Authority.

The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan, and must demonstrate that site remediation criteria have been met. Where longer-term monitoring of pollutant linkages is identified as being necessary, the report shall clearly set out plans for monitoring, provision for maintenance, relevant triggers and contingency actions (a "long-term monitoring and maintenance plan').

The long-term monitoring and maintenance plan shall be implemented as approved.

Reason: Having due regard to policies CS11 and DM10 of the Havant Borough Adopted Core Strategy (2011) and DM17 of the Havant Borough Local Plan (Allocations) (2014), Contamination may be present at the site as a result of previous land uses (&/or activities) on site and in the vicinity, that could pose a risk groundwater & local surface waters (ecology), to the proposed buildings, and future occupiers of the site.

17 The new industrial units shall not be occupied and the new parking spaces in front of Bay 3 of Building 1000 shall not be used until:

- Details of the design of the proposed barriers; and
- A Management Plan for the proposed traffic barriers within the site;

have been submitted to and approved in writing by the Local Planning Authority. The approved details shall be implemented before any of the new industrial units are occupied, or the new parking spaces in front of Bay 3 of Building 1000 are used, whichever is the earlier, and retained in perpetuity.

The traffic barriers shall prevent the new industrial units and parking accessed to the west of the barriers being utilised by vehicles from Langstone Road between 07.30am and 09.00am.
Reason: In the interests of highway safety and operation and having due regard to policies CS20 and DM12 and the National Planning Policy Framework.

18 The new industrial units shall not be brought into use unless and until signage to direct HGV movements as depicted on DTA drawing 20428-05 HGV Routing restrictions has been erected in accordance with the details shown. The signage shall thereafter be retained and maintained unless otherwise agreed in writing by the Local Planning Authority.
Reason: To ensure that HGV movements are directed to limit access from Langstone Road in the interests of traffic flow and highway safety having due regard to policies CS20 and DM12 of the Havant Borough Local Plan (Core Strategy) and the National Planning Policy Framework.

19 Each phase of the development hereby permitted shall not be brought into use unless and until details of cycle storage, in the quantum and position illustrated on drawings 4046C-0110_F and 4046A-200_F, with the exception of those shown for unit 12 are submitted to and approved in writing by the Local Planning Authority.

In relation to unit 12, details of 12 long stay and 5 short stay cycle parking spaces shall be submitted to and approved in writing by the Local Planning Authority.
The approved cycle parking provision shall thereafter be provided prior to the relevant phase of the development being brought into use and thereafter maintained in accordance with the approved details.
Reason: To ensure the provision of sustainable transport options and having due regard to policy DM14 of the Havant Borough Local Plan (Core Strategy) 2011 Havant Borough Parking Standards SPD 2016 (as amended) and the National Planning Policy Framework.

20 The Norway Maple trees shown to be felled on the Tree Protection Plan as T41 and T42 and listed in the Arboricultural Method Statement Ref. 1087.bjh Sept 19 shall not be removed until full details and specifications of replacement tree planting for the Norway Maple trees to be felled has been submitted to and approved in writing by the Local Planning Authority. The approved replacement planting shall be carried out in the first planting season following approval of the details. Any trees or shrubs planted or retained in accordance with this condition which are removed, uprooted, destroyed, die or become severely damaged or become seriously diseased within 5 years of planting shall be replaced within the next planting season by trees or shrubs of similar size and species to those originally required to be planted.
Reason: To conserve and safeguard the visual amenities of the locality and having due regard to policies CS11 and CS16 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

21 Within 6 months of any phase of the development first becoming occupied, written documentary evidence proving that the relevant phase has achieved at minimum Very Good against the BREEAM Standard in the form of post construction assessment and certificate as issued by a legitimate BREEAM certification body shall be submitted to the Local Planning Authority for its approval.
Reason: To ensure the development contributes to sustainable construction in accordance with policy CS4 of the Havant Borough Local Plan (Core Strategy) 2011.

22 The car parking, servicing and other vehicular access arrangements shown on the approved plans to serve the development hereby permitted shall be made fully available for use prior to the new industrial units being first brought into use and shall be retained thereafter for their intended purpose, unless alternative arrangements are approved by the local planning authority in the context of a phasing plan pursuant to condition 3.
Reason: In the interests of highway safety and having due regard to policy DM14 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

23 The external sound level emitted from plant, machinery or equipment at the development shall be equal or lower than the representative background sound level, with noise levels assessed (if necessary) in accordance with BS4142:2014 at the nearest and/or most affected noise sensitive premises.
Reason: To protect the amenity of the nearest residential receptors having due regard to policy DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

24 No externally visible or audible plant, machinery or structures required for ventilation or filtration purposes shall be installed at the premises until and unless details of the external appearance and acoustic and odour prevention performance of the same have been submitted to and approved in writing by the Local Planning Authority.
Reason: To safeguard the amenities of the locality and occupiers of nearby property and having due regard to policies CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

25 Notwithstanding the provisions of the Town and Country Planning (Use Classes) Order 1987, (as amended) and any Town and Country Planning (General Permitted Development) Order, the new industrial buildings hereby permitted shall only be used as flexible B1(c), B2 and B8 uses**;** and for no other purposes within the Use Classes Order 1987 (as amended).
Reason: To accord with the terms of the application in the interests of amenity and having due regard to Policies CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

26 Notwithstanding the provisions of the General Permitted Development Order (As Amended) no additional first floor mezzanine floorspace shall be created within the development hereby permitted.
Reason: To ensure that adequate car and cycle parking provision is provided on site having due regard to policy DM14 of the Havant Borough Local Plan (Core Strategy) 2011, Havant Borough Council Parking SPD 2016 (partly updated 2019) and the National Planning Policy Framework

Other Important Information:

(1) This notice only relates to the decision of Havant Borough Council as Local Planning Authority under the Town and Country Planning Acts. It does not relate to any other application that may be required under the Building Regulations or under any other Act, Regulation, Byelaw or Order where the Council's approval may be needed. For further guidance as to the need for consent under the Building Regulations please phone 023 9244 6571.

(2) Your attention is drawn to the attached information regarding firstly your right to appeal to the Planning Inspectorate, if you are aggrieved by the Council's decision, and secondly the rights of an owner to, in certain circumstances serve a purchase notice on the Council. See www.planningportal.gov.uk/pcs.

(3) Any failure to adhere to the details of the approved plans, and other documents or to comply with any conditions listed above may lead to enforcement action being taken by the Council. If you wish to depart from the approved details or conditions in any

way you should contact the Planning and Development service at the Plaza or by telephoning 023 9244 6015.

(4) In accordance with paragraphs 38-50 of the NPPF Havant Borough Council (HBC) takes a positive and proactive approach and works with applicants/agents on development proposals in a manner focused on solutions by:

- Offering a pre-application advice service, and
- Updating you of any issues that may arise in the processing of your application and where possible suggesting solutions, and,

In this instance:

- You sought and were provided with pre-application advice,
- You were updated about issues after the initial site visit.

(5) This permission was granted subject to a planning obligation agreement made under Section 106 of the Town & Country Planning Act 1990 dated 22 July 2020 which requires the following:

- Travel Plan requirements
- Access Road and Signage Works
- Right Turn and Roundabout Signage Works Contribution
- Bus Infrastructure Contribution
- Northern Footpath Connection Works
- Footpath 51 Contribution and requirements

(6) The applicant is advised that the Environment Agency have provided the following comments:

Planning permission does not remove the requirement for an Environmental Permit. The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- *on or within 8 metres of a main river (16 metres if tidal)*
- *on or within 8 metres of a flood defence structure or culvert (16 metres if tidal)*
- *on or within 16 metres of a sea defence*
- *involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert*
- *in a floodplain more than 8 metres from the river bank, culvert or flood defence structure (16 metres if it's a tidal main river) and you don't already have planning permission.*

For further guidance please visit https:/lwww.gov.uklguidance/flood-risk-activities-environmental-permits or contact our National Customer Contact Centre on 03702 422549. The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

(7) You are hereby requested to ensure that no works or ancillary operations associated with any demolition, excavation, clearance and construction works at the development, which are audible at the site boundary, shall take place on any Sunday or Bank / Public Holiday, nor on any other day except between the following times: Monday to Friday: 08.00 - 18.00 and Saturday: 08:00 - 13.00.
This is in order to protect the occupants of nearby residential properties from noise and vibration nuisance

(8) You are hereby requested to ensure that the Environmental Health Pollution team, at Havant Borough Council are advised in writing as to what measures are to be put in place for the control of any dust that might emanate from the development site. This is in order to protect the occupants of nearby residential properties from dust pollution.

(9) You are hereby requested to ensure that any external lighting that may be installed on this site, within the grounds or attached to the building, is so positioned so as not to cause nuisance to neighbouring properties. This is in order to protect the occupants of nearby residential dwellings from light pollution.

(10) The applicant is advised of the comments received from Hampshire Fire and Rescue which can be viewed on the Councils Website at the following address:

https://planningpublicaccess.havant.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=DCAPR_246448

(11) The applicant is advised that Hampshire County Council as the Local Lead Flood Authority have provided the following advice:

We would also recommend that the applicant is directed to our website http://www3.hants.gov.uklflooding/hampshireflooding/drainagesystems.htm for further information on recommended surface water drainage techniques.

(12) The applicant is advised of the comments of Southern Water in relation to the proposed development. The consultation responses can be viewed on the Councils website at the following address:

https://planningpublicaccess.havant.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=DCAPR_246448

(13) The applicant is advised that Hampshire County Council Countryside Access Team have advised that:

i. Nothing connected with the development or its future use should have an adverse effect on the right of way, which must remain available for public use at all times.

ii. There must be no surface alterations to a public right of way without the consent of Hampshire County Council as Highway Authority. To carry out any such works without this permission would constitute an offence under s131 Highways Act 1980.

(14) In relation to the above conditions 'Temporary Works' are defined as “Works that are required between the demolition contractor completing their works and the main contractor commencing their works, including temporary weather protection and support.”

Simon Jenkins

Simon Jenkins
Director of Regeneration and Place

Our Ref: APP/19/00703

22 July 2020

Our Ref: APP/19/00703

TOWN AND COUNTRY PLANNING ACT 1990

NOTIFICATION TO BE SENT TO AN APPLICANT WHEN A LOCAL PLANNING AUTHORITY REFUSE PLANNING PERMISSION OR GRANT IT SUBJECT TO CONDITIONS

- These notes are for information only and do not purport to set out the law on the subject.
- Only the applicant possesses the right of appeal.

Appeals to the Secretary of State

- If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

- If this is a decision on a planning application relating to the same or substantially the same land and development as is already the subject of an enforcement notice and you want to appeal against your local planning authority's decision on your application, then you must do so within 28 days of the date of this notice.

- If an enforcement notice is served relating to the same or substantially the same land and development as in your application and if you want to appeal against your local planning authority's decision on your application, then you must do so within 28 days of the date of service of the enforcement notice, or within 6 months [12 weeks in the case of a householder appeal] of the date of this notice, whichever period expires earlier.

- If this is a decision to refuse planning permission for a householder application and you want to appeal against your local planning authority's decision then you must do so within 12 weeks of the date of this notice.

- If this is a decision to refuse planning permission for a minor commercial application and you want to appeal against your local planning authority's decision then you must do so within 12 weeks of the date of this notice.

- If this is a decision to refuse express consent for the display of an advertisement and you want to appeal against your local planning authority's decision then you must do so within 8 weeks of the date of receipt of this notice.

- If this is a decision to refuse consent to work on a tree which is subject to a Tree Preservation Order and you want to appeal against your local planning authority's decision then you must do so within 28 days of the date of this notice.

- If this is a decision to refuse any other type of application and you want to appeal against your local planning authority's decision then you must do so within 6 months of the date of this notice.

- **Appeals can be made online at:** https://www.gov.uk/planning-inspectorate.
  If you are unable to access the online appeal form, please contact the Planning Inspectorate to obtain a paper copy of the appeal form on tel: 0303 444 5000.

- The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

- The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

If you intend to submit an appeal that you would like examined by inquiry, then you must notify the Local Planning Authority and Planning Inspectorate (inquiryappeals@planninginspectorate.gov.uk) at least 10 days before submitting the appeal. Further details are on GOV.UK.

Our Ref: APP/19/00703

IMPORTANT NOTICE FOR APPLICANTS WITH REGARD TO BUILDING REGULATIONS

This notice only relates to the decision of Havant Borough Council under the Town and Country Planning Acts. It does not relate to any other application that may be required any other Act, Regulation, Byelaw or Order where the Council's approval may be needed.

For further guidance as the need for consent under the Building Regulations, please telephone Havant Borough Council's Building Control team on:

023 9244 6571

HAVANT BOROUGH COUNCIL

Town & Country Planning Act 1990

Consultation on Planning Application

MEMORANDUM

From:	**Environmental Health**	**To:**	**Development Control**
Our Ref:	CONS/19/01560	**Your Ref:**	APP/19/00703
EH Case Officer Extn:	44 6677	**Date:**	27 August 2019

DC Case Officer: David Eaves
DC Case Officer Extn: 44 6549
Application Number: APP/19/00703
Site Address: Langstone Technology Park, 2B Langstone Road, Havant, PO9 1SA
Proposed Development: Part-demolition of Building 1000 and associated works; the erection of new flexible use industrial units; and a new parking layout with associated works to layout and access.
Any views you should wish to make should be returned to me no later than 28/08/2019.

Observations / Comments:

I have reviewed the application supporting documents, a inclusive of the REC Air Quality Assessment Report, Peter Brett Transport Assessment, Delta Simons Preliminary Geo-Environmental Risk Assessment, the Drainage and Flood Risk Assessment, and related Scheme Design/Sustainability Documents.

Given the documents submitted, it is appropriate to provide comments on interrelated areas of 'air quality / sustainability / transport' (air quality), and 'contamination / ground conditions / drainage strategy' (contamination), and drainage strategy (pollution).

Contamination

The Risk Assessment highlights some results from preceding rounds of investigation (not previously reviewed), including suggestions of possible ground gas issues, groundwater contamination with persistent aquatic pollutants, and evidence of localised contamination with arsenic and toxic heavy metals (Pb, Hg, Cd). Site walkovers have in the past identified other features that warrant caution - including the storage and handling of cyanide and industrial solvents - in the latter case, within in below-ground storage areas.

The site is large, and the relative low-sensitivity in terms of human health is accepted - however the site is also bound to the East by the Lavant, and the site is less than 1km upstream of internationally protected aquatic habitat. The risk driver for the site is likely to be the potential pollutant linkage between identified contaminants toxic to aquatic ecosystems (Heavy Metals, PAH / BTEX, and Chlorinated Solvents), and potentially significant, mobile contaminants such as cyanide.

Section 6.1 of the Delta-Simons report acknowledges this, recommending an intrusive SI within the development areas to include sampling of soils, leachate, groundwater and soil-gas - largely for the purpose of confirming a suspected low risk.

On the basis that there are sensitive receptors immediately adjacent to the site, shallow groundwater (a contaminant migration vector) has been identified alongside a feature which may be capable of acting as a preferential migration pathway (vector between source and receptor) for mobile contaminants, and that there are numerous potential sources of contaminants relevant to the adjacent receptor - I would agree that investigation is prudent.

It is also acknowledged that the proposed development could in principle be significantly affected by contamination (particularly gas), and so there is also some merit in confirming an anticipated low risk to the future occupants. I would recommend that the investigation proposed in section 6.1 be secured by means of suitable conditions, suggested wording below:

Condition 1 (Contamination – omitting EDS, based upon submitted proposals)

Prior to the commencement of any specific phase of development approved by this planning permission (other than demolition, site clearance, or any other date or stage in development as may be agreed in writing with the Local Planning Authority), an assessment of the nature and extent of contamination at the site, whether originating from within or outside the curtilage, shall be submitted to and approved in writing by the Local Planning Authority.

The assessment may comprise separate reports as appropriate, but shall be undertaken by competent persons and unless specifically excluded in writing by the Local Planning Authority, shall include;

1) *An intrusive site investigation based on the proposals outlined within the Preliminary Geo-Environmental Risk Assessment Ref_19-0687.01 (section 6.0); to provide sufficient data and information to adequately identify & characterise any physical contamination on or affecting the site, and to inform an appropriate assessment of the risks to all identified receptors.*

2) *The results of an appropriate risk assessment based upon (1), and where unacceptable risks are identified, a Remediation Strategy that includes;*
    - *appropriately considered remedial objectives,*
    - *an appraisal of remedial &/or risk mitigation options, having due regard to sustainability, and;*
    - *clearly defined proposals for mitigation of the identified risks, and;*

3) *A verification plan providing details of the data that will be collected in order to demonstrate that the works set out any Remediation Strategy required under (2) are complete, identifying any requirements for longer-term monitoring of pollutant linkages, maintenance of engineered mitigation measures, and arrangements for contingency action.*

All elements shall be adhered to unless agreed in writing by the Local Planning Authority.

***Reason:** Having due regard to policies DM10 of the Havant Borough Adopted Core Strategy [2011] and DM17 of the Havant Borough Local Plan (Allocations) [2014], Contamination may be present at the site as a result of previous land uses (&/or activities) on site and in the vicinity, that could pose a risk groundwater & local surface waters (ecology), to the proposed buildings, and future occupiers of the site.*

Verification (Standard) [2]

*Prior to the occupation of any relevant part of the permitted development, any verification report required in accordance with **condition [1]** shall be submitted to and approved in writing by the Local Planning Authority.*

The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan, and must demonstrate that site remediation criteria have been met. Where longer-term monitoring of pollutant linkages is identified as being necessary, the report shall clearly set out plans for monitoring, provision for maintenance, relevant triggers and contingency actions (a "long-term monitoring and maintenance plan").

The long-term monitoring and maintenance plan shall be implemented as approved.

***Reason: Having** due regard to policies DM10 of the Havant Borough Adopted Core Strategy [2011] and DM17 of the Havant Borough Local Plan (Allocations) [2014], Contamination may be present at the site as a result of previous land uses (&/or activities) on site and in the vicinity, that could pose a risk groundwater & local surface waters (ecology), to the proposed buildings, and future occupiers of the site.*

Drainage Strategy (Pollution)

The drainage strategy (Clancy Consulting 8/1982) identifies existing private stormwater drainage features which represents the applicants preferred option for disposal of site surface water.

It is noted that the Environment Agency has no objection, and that a permit will not be required provided that the water is 'clean' (i.e. that sufficient pollution attenuation features are present upstream of the discharge point, in accordance with the SuDS manual guidelines).

The strategy describes some pollution control measures. Car parking area are reliant upon a permeable-paving solution for exclusion of suspended solids and hydrocarbons from the surface water system. With reference to the landscaping scheme, which calls for impermeable access roads (including between parking bays), this strategy implies that impermeable areas fall to permeable areas and are not positively drained. If this is the case, and the permeable surface is capable of passing the water falling directly upon it's surface + the contribution from the impermeable surfaces - then this element of the strategy may be agreed.

If (however) the impermeable surfaces are to be positively drained, the pollutant attenuation capacity of the permeable surface cannot be relied upon for the area occupied by the impermeable access roads, and so downstream attenuation features will be necessary.

I note that permeable surfacing is not proposed for the industrial areas, due to their inability to meet the required load-carrying requirements. These areas are to be positively drained, and the drainage strategy confirms that 2 no. Hydro-International "Downstream Defender" units are proposed to provide the necessary primary & secondary treatment (a single unit is insufficient to manage the anticipated pollutant inputs, so these are to be connected in series).

This is acceptable in principle, though with reference to the drainage layout I note that the treatment is proposed downstream of the flow-rate attenuation (hydrobrake chamber, limiting to a fairly high rate of 132 l/s), and that roof water is not to be separated from the surface water collection system.

The Environment Agency often requests a condition precluding the passing of roofwater via in oil interceptor unit, in order to minimise the risk of 'wash through' or bypass of attenuation chambers during periods of high flows. The proposed downstream defender units are in lieu of oil interceptor units which are commonly installed at such developments to manage the elevated risk. Given the reduced pollutant attenuation rating quoted in the report (for the Downstream Defender units), I would assume that an equivalent or higher risk of 'wash through' exists (relative to a proprietary oil interceptor) , and therefore that the reason for seeking to separate roof water & surface runoff would equally apply to this scheme.

Whilst I will leave it to the LLFA to comment on the flow attenuation and storage capacity volumes - *I would recommend that the applicant consider separating the surface water systems* (i.e. to dispose of roofwater direct, and pass hardstanding runoff from the industrial area via the Defender units) *in order to avoid the risk of washout / wash-through when operating at high flow rates.*

If the applicant is not amenable to a scheme amendment, I would recommend that additional

information is requested from the applicant to demonstrate the efficacy of the units for pollutant attenuation & retention under anticipated maximum flow conditions (recognising that the design flow rate quoted will likely not represent a maximum flow rate if comprising a venturi-type device).

It may also be prudent to seek the opinion of the Environment Agency on the need (or otherwise) for separating the systems, taking full account of any additional information provided by the application in respect of pollution attenuation performance.

Other than this, I have few concerns - the drainage strategy provides a clear statement of liability for the private drainage system, and a commitment that the Operations & Maintenance Manual will include all measures described in the drainage strategy. The system is uncomplicated from the perspective that there are no 'soft' SuDS measures - the system comprises 100% 'engineered' SuDS which whilst lacking some of the ancillary benefits, is likely to be more reliable / lower maintenance.

Air Quality (Assessment of Impact)

I note that a number of the local objections relate to the concentration of parking adjacent to the East access. This is interpreted by objectors as being contrary to policy, and as risking a routing bias that is perceived to be likely to lead to additional congestion at the A3023/East Access due to turning movements, and by extension to be a directly associated air pollution impact.

The Air Quality Assessment (REC report Ref: AQ107578 iss.1) aims to quantify the air pollution impact at the East Access. It is worth noting that the Air Quality assessment is heavily reliant upon the veracity of the baseline traffic flow estimates from which the development emissions impact derives, and that in the context of the Air Quality assessment, these are presented as 'black box' estimates which do not directly derive from traffic surveys presented in the Transport Assessment (DTA report Ref: RJM/AK/20428-04c TA).

The Transport Assessment is primarily concerned with the traffic impact on junction capacity & flow during peak periods, and surveys consisted of East & West Access automatic traffic counts, manual turning counts at the A3023/site access and the Brookside Road / Southmoor Lane junction, and U-Turn Counts at Woodbury Avenue & Langbrook Close. No AADT conversion factors are presented, and it is consequently unclear how the baseline traffic flows have been derived for the Air Quality Assessment.

The Air Quality (impact of development) Assessment is concerned with the change in traffic flows as a result of the development, meaning that the most critical factor is the development-related traffic growth, and it's distribution on the local road network.

Flow figures are presented within the Air Quality Assessment for both 2020 'baseline growth' (Do Minimum, DM) and + 'baseline growth + development contribution' (Do Something, DS) scenario's. The report does not specifically identify individual road links - Figure 7 shows 'whole modelled network' only. This makes it very difficult to interrogate the conceptual traffic distribution model applied.

Interrogation of the model is important, as the traffic distribution underpins the Air Quality Assessment, and if the traffic model is flawed, the Air Quality assessment will reflect those flaws.

With reference to the DM & DS traffic flow scenarios presented in Table AII.2, the distribution model appears anomalous. Traffic reductions are anticipated under the DS scenario at *both* site accesses, consistent with an overall, systemic reduction in transport demand as a result of the development.

Taken at face value, this is entirely inconsistent with the DS scenario, which accounts for material traffic growth on all Langstone Road Links, A27 Westbound & All A27 slip roads *as a direct result of the development.* If the development reduces overall transport demand (of the

Langstone Tech Park, as an origin or destination), why then is there development-related traffic growth represented across almost the entire modelled local road network, other than at the site accesses & on the Harts Farm Way approach to the West Access?

This is sufficient to question the usefulness / reliability of the air quality assessment - certainly until conceptual basis for this apparently anomalous distribution is clarified.

It is not considered that the air quality assessment is sufficiently robust as to support a conclusion that a non-negligible/adverse development air-quality impact is unlikely. It must be acknowledged that the receptors modelled as R1 to R3 (Regents Court, The Limes) are arguably the most 'at risk' receptors in the Borough, in terms of likelihood of exceeding National Air Quality Strategy (NAQS) objectives, so any possibility of 'real world' adverse impact could materially increase the risk of triggering a Council duty to step in to manage local air quality.

Any adverse effect is unlikely to warrant an objection to the principle of development (given the theoretical consented use travel demand), however it might justify the enhancement of the sustainability credentials of the proposed buildings, a specific design response which aims to further limit the use of the East access (e.g. access road layout and signage), or a commitment to more ambitious travel plan targets.

I would recommend that clarification is sought on the traffic model underpinning the air quality assessment, as a starting point.

Transport Assessment

The study establishes that the site is operating at around 70% occupancy. It follows that the transport demand potential of the existing site use is elevated relative to the actual transport demand under present (baseline) conditions. It also follows that there is a critical difference between what is a significant change in 'real world' terms, and what represents a material change in planning terms.

The transport assessment essentially concludes a broadly neutral (actually slightly positive) development impact at the East Access relative to the 'existing potential demand'. This would correspond to an increased demand relative to current East Access transport demand, and it is worth noting that a successful development is likely to reduce the gap between 'theoretical' and 'actual' demand relative to the existing configuration of the site.

In planning terms however, it would seem conceptually impossible to conclude that a marginally reduced transport demand relative to the theoretical demand of the presently consented landuse could ever be deemed to be severe, such that the development could be considered to be contrary to policy. The focus should therefore be on whether there may be a 'sub-severe' real-world impact (i.e. relative to existing actual demand) which could significantly affect local air quality, and which might warrant consideration of mitigation measures.

For example, reaching junction saturation conditions during peak periods could precipitate disproportionate emissions impacts through interference with the free-flow of traffic on links & trips who's origin or destination is not the development site.

Transport Assessment presents peak period junction capacity assessments for the respective site access junctions, and of these, the Langstone Road (site East access) is of the greatest interest. The PICADY summary for the East access indicates that the southbound right-hand turn movement into the site is presently operating at well within it's design capacity under 'theoretical' AM peak conditions, at an RFC of 0.71 (c.f. a recommended <0.85). Under 100% occupancy, the RFC (AM peak) climbs to 0.89.

The Queue length survey presented would appear to offer a slightly less optimistic view of capacity, with the 15 minute segment AM peak queue (existing demand) of 18 vehicles (90m approx, relative to an available 85m stacking space in the right hand turn lane). The RFC for

the peak hour does not reflect the saturation of this lane, and it is considered that increased real-world demand at this junction will lead to an increased frequency of saturation of this turning lane in the AM peak, and will have a consequential impact upon lane 2 (southbound merging lane).

The Report identifies a similarly capacity issue at the East Access, with a current / baseline RFC of 0.7, a theoretical (100% occupancy, consented baseline) of 1.04, and a development scenario of 1.01 (over-capacity, but less so than consented maximum). This implies that much of the capacity problem will be restricted to the internal site access road, which has sufficient stacking space to accommodate waiting vehicles. It is also recognised that the problem could be 'self limiting' to a degree, in that vehicle leaving the site could choose to use the West access to avoid an outbound turning movement queue (and local congestion on Langstone Road which is likely to be the causative factor).

This is an interesting observation, as the Air Quality report returns a marginal adverse change in air quality at all modelled receptors other than those closest to the site access stacking capacity - indicating that this effect is not represented in the Air Quality model.

Other observations / comments may be briefly summarised as below;

- The relative accessibility of the site is agreed - access to a broad range of public transport services is assured by both the rail & bus stations being within walking distance, and pedestrian / cycle facilities being of good quality
- As a result of the site's structural accessibility, the framework travel plan is expected to have a good probability of success in shifting employee trips from single-occupancy private motor car trips to a range of more sustainable transport modes. It would be appropriate for the framework plan to set challenging mode-shift targets. It is considered that a -5% target falls short of challenging given the opportunities for sustainable travel to the site.
- The routing of HGV traffic via the West Access under the proposed construction traffic management plan (6.11.1 & 6.11.3) is agreed to be likely to be effective in minimise the air quality impacts of the development phase, and is therefore supported.
- The restriction of HGV traffic to the East Access is agreed to be likely to be effective in minimising the both the traffic & air quality impact of the new industrial development. It is understood that this will remove existing HGV trips which currently utilise this junction, and could in this sense represent a net positive impact. The mode of restriction is agreed to be likely to be successful/effective.
- The balance of parking and site access road layout changes are considered to be likely to maintain and support the broadly even split between the East & West Accesses.

I would conclude that it is plausible that the development will have a broadly neutral impact at it's access points to the local road network relative to the existing potential usage. In planning terms therefore it would be difficult to challenge the principal of development on this basis.

The observations on 'real world' traffic impact at the East access (described above) are however relevant to the consideration of Air Quality.

Air Quality (Mitigation)

The Air Quality Assessment makes reference to emerging policy under the Local Plan 2036, but likely refers to a previous draft, identifying E20 (current E22) which concerns the protection of future occupants of development and existing receptors from 'significant negative effects' resulting from development-related changes to air quality (increase in local air pollution).

The assessment does not consider policy E23 (air pollution), which seeks a mitigation of the emissions impacts of all development, irrespective of whether the NAQS objectives apply or not - this policy is about achieving incremental improvements in public health, by reducing personal exposures at all locations including workplace environments and within the general public realm.

The BREEAM assessment includes potential credits for air quality related sustainability features, but these are generally limited, and the development proposals do not achieve the BREEAM criteria for building heating NOx emissions. Credits are awarded in the pre-assessment for commitment to the undertaking of an LZC Energy feasibility study - but this does not amount to a commitment to implementing any LZC features for local generation, heating or cooling applications.

The Design and Access statement similarly does not provide a policy response to the emerging Local Plan 2036, and so does not consider a positive design response to the locally poor air in the vicinity of Langstone Road, or to the Infrastructure requirements to support a transition to electric vehicles. the BREEAM pre-assessment confirms that consideration of a % allocation for EV charging at proposed new parking bays is not to be considered further.

Whilst the Design and Access statement does identify opportunities for 'solar exposure and passive ventilation', there is little in the building or landscape design brief to elevate the sustainability credentials of the scheme in air quality terms. The scheme remains reliant on the emerging E(X) / and IN(X) policies carrying negligible weight at this stage.

The apparent anomaly in the baseline assumptions underpinning the air quality impact assessment could justify consideration of mitigation, and consideration of a design response to emerging policy could comprise a proportionate response to the magnitude of impact identified.

Until the fundamental questions around the Air Quality impact assessment are resolved, it is unclear what, if any, response should be sought by the local planning authority within the present policy environment.

Mr. Jonathan Driver
Environmental Control Officer

Appendix G – Regulatory Authority Information

Havant BOROUGH COUNCIL

Civic Offices
Havant
Hampshire
PO9 2AX

T. 023 9247 4174
F. 023 9248 0263
DX 50005 Havant
www.havant.gov.uk

Mr. George Warner
Delta-Simons Environmental Consultants Ltd.
3 Henley Office Park,
Doddington Road
Lincoln

LN6 3QR

Our Ref: DCS/EH/JPD/150817001
Your Ref: [No Ref]
Direct Line: 02392 446677
Ask For: Mr Jonathan Driver

Date: 17/08/2015

Dear Mr. Corfield,

Re: Request for Information: Part2A Status Langstone Technology Park (Partial Site), Langstone Road, Havant PO9 1SA

Further to our telephone conversation, and your subsequent email of 5th August; I am writing as requested in response to your original queries regarding the above referenced site.

Please confirm the Site's status under Part 2A of the EPA – i.e. has the Site been prioritised for assessment under your contaminated land inspection strategy and if so what is its priority?

Havant Borough Council has not undertaken a comprehensive semi-quantitative (numeric) risk based prioritisation exercise, and there is therefore no ranking assigned to this parcel of land.

In respect of risks, the site was brownfield when developed (between 1969 & 1973); being formerly occupied by sewage treatment works & allotment gardens. Several field drains / ephemeral flowing watercourses & an aqueduct previously existed at the site. Some watercourses may remain on site within culverts (representing potential environmental receptors), or these features may have been in-filled (representing potential localises sources of soil gas, for example).

The use of the technology park itself is associated with potentially contaminating landuses, with manufacturing, R&D, and waste processing activities associated with the site throughout its history. There have also been several site configuration changes, with some substantial buildings & associated services demolished / moved, and other buildings constructed.

The site is known to have several service features that could represent contamination source risks – such as on-site transformers, boiler house, UPS facilities, associated fuel stores; flammables storage & sealed drainage systems to preven release of hazardous chemicals stored & handled on site (though I note that the concentration of these facilities, in the SW corner of the site is not included within the supplied plan).

In this way, it is considered to be not unlikely that some soil contamination may be present at the site of the technology park. It is recognised that in terms of receptors, both on-site & adjacent landuse is represented by low-risk commercial use. In addition, the site is located down-hydraulic gradient of the public abstraction source protection zone 1, and there remains some uncertainty

in respect of the presence or sensitivity of on-site watercourses. No main rivers are recorded as being present within the site area supplied, though the Lavant passes beneath the East access road.

I have also undertaken a site visit recently in respect of the SW corner of the site, excluded from this land area, but forming part of the main site. Summary case notes are appended.

In consideration of the above, and the appended – the site is not considered to be a priority for inspection under the Councils Part 2A duties.

In addition are you aware of any reports of intrusive investigations carried out at the Site?

Yes, on-site & adjacent. Reports relating to the site are represented by a relatively low resolution study of the entire Technology Park, alongside a significant area of land to the south (ca. 47 ha total). Reports identified elevated Hg, PAH & Coliforms. The Council is aware of 3 no. separate reports;

- Travers Morgan (no title recorded), 1993
- Structural Soils Ltd. (no title recorded),1995
- GVA Grimley (no title recorded),1999

Our database indicates that the reports comprise;

- Geotechnical Assessment (x2)
- Preliminary Site Investigation
- Soil Gas Monitoring
- Microbiological Analysis
- Phase 1 / Qualitative / generic risk assessment

Please note that the some of the above subjects are likely to be covered in a combined report. No further details are held on the electronic record – the above referenced reports are expected to be located within the paper archives, though it is not clear at present whether these are within the public domain (e.g. submitted in support of a planning application) or not.

Details of site investigations relating to adjacent land are not provided here. I can however confirm that the Council is not aware of any significant, persistent environmental issues in association with the investigated land.

I trust that the above meets with your requirements.

Yours Sincerely



Jonathan Driver
Environmental Control Officer

Attached: Summary case notes from site visit, July 2015 (Langstone Technology Park)

Summary Case Notes – Visit 01/07/2015

Met Fasset Commercial Property Manager on site, along with a Maintenance engineer that has worked on site since '98. Purpose of visit / walkover was to establish:

- whether any high risk liquid product storage had occurred previously within this area of the site,
- operational period of storage tanks / processes shown on hist. mapping & w/i application documents,
- whether accidental release was likely (or at increased likelihood e.g. due to inadequate, failed control structures);
- adequacy of site environmental controls / practice,
- ownership / liability scenario,
- current site condition (evidence of spillage / leakage etc.),
- prior use of building & previous structures at the site (etc.).

Access was gained to storage & tank areas to the North, West & South of Building 41. Work was being undertaken at Building 41 (replacement of roof & alu cladding), access to the building interior was not possible with ongoing work.

Established that:

- Enclosed storage areas ca. 46m north of B41 were for 'flammables' (not specified), comprising 3 no. storage areas,
    - Northerly unit approx. 2m x 6 m, containing racking & alarmed / pumped sump drainage. used for 25L or smaller individually sealed containers. Concrete 'basin' floor to prevent escape of leaked material - excellent condition, expoy type floor paint present within basin, no cracks or staining. Organic odour. Envirochem sample label adj. to sump (Ref_J070041 F1(8) 13/02/15).
    - Mid. storage unit approx 6 x 6m, currently used for wood storage. Previously used for drums. Concrete 'basin' floor to prevent escape of leaked material (approx. 8" bund wall across door) - good condition, expoy type floor paint present within basin, no obvious cracks or staining.
    - Southerly unit approx. 6 x 6m - empty. 'T' shaped internal masonry wall - rust 'rings' on floor from upright storage of gas bottles - chain / restraint anchor points visible on walls. Not significant staining, concrete flooring in good condition.
- Twin fuel tanks ca. 25m N of B41; plinths remain visible as concrete rings of approx 10m dia, covered with macadam. Engineer indicates tanks were solely above ground, visible elements are tank support bases. Substantial bund structure remains in tact. Pumped sump drainage facility remains operational - goes to "tank pit" with all other bund/sump drainage. Concrete condition excellent, substantial, lacking any obvious damage or cracking - no staining within bund basin. Formerly served site-wide space heating facility - boiler house located to the north (ca 175m) - since converted to nat. gas. Ceased to be operational <1998, so max. operational period 1975-1998, ~28yrs (likely less - built prior to 1989, exact date unknown)- relatively short operational period, making accidental release due to containment failure less likely. Material stored was confirmed to be diesel fuel.
- Large water tank was used for storage of (final product) De-Ionised water for use in electronics manufacture. B41 was D/I Water production facility previously- tank vessels shown on application document plans are related to this production activity. Substantial bund wall ca. 10'/2.5,m tall - accessed via ladder. Bund to control water volume in event of tank containment failure - to protect surrounding structures. Decommissioned (as fuel tanks)- evidence of prior algal growth within bund as desiccated plates.

- Bunded above-ground tank containment area adjacent to B41 (West) - raised plinths evident within substantial bund area. Bund volume significantly in excess of tank volumes. ca. 1m tall - in process of being removed during visit - concrete & reinforcements seem to be in excellent condition, no surface or within-matrix. staining evident. Signs identify products stored to be Sodium-Hydroxide & HC Acid. Engineer confirms bunded storage area was used for 'acids & caustics' - unlikely to be environmentally persistent due to solubility & reactivity.
- All drainage pumped to 'tanker pit' (structural grille-covered holding tank - to catch delivery spillages; approx 10m x 2.5m ca. 50,000L cap.. Historically tested prior to discharge to foul sewer, treated on site prior to discharge if necc, facility to tanker for off-site treatment if heavily contaminated. Currently full - ('reservoir' sample?) - no sheens or odour. Emptied regularly, around quarterly.
- 13m x 7m area oriented 45 degree to access road (S of building 41) is overnight parking area for vehicles carrying tanker, or containers of liquid - i.e. a bunded area that can be used for parking of vehicles carrying hazardous chems, to contain leakage. Good env. practice.
- This area of the site was previously used as playing fields associated with the IBM facility, small building formerly occupying site of B41 was sports pavilion / clubhouse.
- 'Site electricity supply' refers to local sub-station, not local generation (though UPS likely to be on site for critical facilities). Consideration is being given to biomass combustion for local generation - not firm plans.

Discussed Envrochem tests - all from drainage system - expected to be clean given rainwater throughput & period of time building has been non-operational. Significantly elevated determinands would have been cause for concern. Samples don't represent ‘Site Investigation’ samples.

There remains possible sources of contamination (diesel fuel & 'flammables' - likely toluene / BTEX) on site, possible plasticisers (phthalate, VC etc.) from nearest off-site source. However, local (on-site) contaminant release considered low risk given the provision for & condition of containment, evidence of good management practice, and the lack of staining / evidence of spillage.

From: Driver, Jonathan <Jonathan.Driver@havant.gov.uk>
Sent: 21 October 2020 16:09
To: Heidi Richardson
Subject: RE: Contaminated Land Enquiry - Langstone Technology Park, Havant, PO9 1SA

Good Afternoon Heidi,

I can confirm that there are no material changes to the site's Part2A status. Since the original request, the Council has received one additional assessment report (Delta-Simons Project No. 19-0687.01, July 2019; preliminary geo-environmental risk assessment) in respect of the site. As you will no doubt be aware, that report did not include the results of any fieldwork that would materially advance empirical knowledge about the soil conditions at the site. It is assumed that you have access to that document, and do not need to be signposted to the relevant planning record to obtain a copy.

Best Regards,

Jon

Jonathan Driver
Environmental Control Officer

Havant Borough Council Environmental Health
Public Service Plaza, Civic Centre Road, Havant, Hants PO9 2AX

Tel (Direct Dial): 023 9244 6677
Tel (Mobile) : 07887 951 106
Tel (Team Admin): 023 9244 6670

Email: jonathan.driver@havant.gov.uk

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www.facebook.com/havantboroughcouncil
www.twitter.com/havantborough

From: Heidi Richardson <Heidi.Richardson@deltasimons.com>
Sent: 21 October 2020 10:11
To: Driver, Jonathan <Jonathan.Driver@havant.gov.uk>
Subject: Contaminated Land Enquiry - Langstone Technology Park, Havant, PO9 1SA

Hi Jonathan,

Your team provided us with the attached response in relation to a previous enquiry for the above Site in 2015. We are currently in the process of updating our Phase I Environmental Assessment. Could you please confirm if the Site's status and under Part 2A remains the same as in 2015, or if it has been changed?

Kind regards,
Heidi

Heidi Richardson
Consultant
M: +44 (0)7791 691636
www.deltasimons.com



deltasimons INOGEN ALLIANCE

Birmingham Bristol Dublin Leeds Lincoln London Manchester Newcastle Norwich Nottingham

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Appendix H – Previous Reports

Ground Investigation Report

Job Title: IBM, Langstone Road, Havant, Hampshire.

Client: Blyth and Blyth Associates

Controlled Document

Soils Limited Document No.	J3403		
Status: Interpretative Report		Copy No.	TWO
	Name	Signature	Date
Prepared by:	G Evans		15/2/94
Checked by:	N Lambert		15/2/94

ANTHONY WARD PARTNERSHIP
16 FEB 1994
FILE
RCD'D
ACTION

Soils Limited
Newton House
Cross Road
Tadworth

The silt samples submitted for analysis on 29th March 1994 were air dried and the concentrations require no correction.

Location	Comments On Results
Soil Samples - Borehole and trial pits Submitted for analysis on 2nd February 1994	
BH1 0.5m A01388	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**
BH2 0.5m A01389	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**
BH3 0.3m A01402	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**
BH4 A0246 10.5m	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

(c) Soils Limited
J3403CON.DOC

BH5 0.5m A01399	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

BH6 0.6m A01390	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

BH7 1.3m A01392	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

BH8 1.0m A02463	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

BH10 1.0m A02465	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

BH11 1.0m A02462	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

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TP7 0.5m A01394	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

TP8 0.5m A01397	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

TP9 0.15m A01398	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

TP13 0.2m A01391	The pH was near neutral and the concentrations measured were within the range for natural uncontaminated soils. **Soil sample shows no contamination**

19 Samples
No contamination

Water Samples - Groundwater
Submitted for analysis on 19th January 1994

BH6 1.8m A01408	Groundwater sample shows no significant contamination.

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2.6.2 Contamination with coliform bacteria

The ground water encountered in Borehole 2 was noted as having a sewage type odour and a sample, from a depth of 1.5 metres, was taken from the methane monitoring well and submitted for bacteriological analysis. Faecal coliforms were found to be present in the sample.

There are two possible sources for this, the sewage works immediately beyond the western boundary, or leakage from a foul sewer connection to the temporary changing rooms.

Enquiries made by Blyth and Blyth Consulting Engineers of I.B.M have determined that the foul sewer connection to the changing rooms had failed and has now been repaired.

2.7 Landfill gas monitoring

No putrescible material that could give rise to the on-site generation of hazardous gasses was encountered in the trial pits, apart from a thin layer of peaty material encountered at shallow depth in Trial Pit 12.

It is understood that a landfill site is located adjacent to the western boundary of the site. As a consequence landfill gas monitoring wells were installed in a number of the boreholes in order to monitor any migration of landfill gases.

The clayey soils encountered at shallow depth, coupled with the high ground water table will decrease the susceptibility of the site to the migration of gasses from beyond the site boundaries.

Methane monitoring stations were installed around the site and the results of the monitoring is presented below in Table A.

The gas monitoring wells comprised a 50mm slotted liner in a gravel filled 150mm diameter borehole. The top metre of the well was sealed with a bentonite cement grout.

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Readings of the concentration of oxygen, lower explosive limit (LEL), methane and carbon dioxide were taken and the ground water level and barometric pressure at the time of reading recorded.

Landfill gases were not found in the monitoring wells.

Table A
Results Of Gas Measurements

Date	BH	CO_2%	L.E.L%	CH_4%	O_2%	Pressure Mb	Water Level (m b.g.l)
26/01/94	1	.03	0.0	0.0	20.5	1032	1.70
26/01/94	2	.06	0.0	0.0	20.0	1032	1.36
26/01/94	11	.06	0.0	0.0	19.4	1032	1.20
26/01/94	12	.04	0.0	0.0	20.0	1032	0.32
04/02/94	1	.03	0.0	0.0	20.2	1022	1.65
04/02/94	2	.07	0.0	0.0	20.5	1022	1.36
04/02/94	11	.05	0.0	0.0	19.5	1022	1.00
14/02/94	12	.05	0.0	0.0	20.2	1022	0.32

The above results show that no special precautions are required for the design of structures as there is no evidence that landfill gases are present on the site.

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F. Campbell

Alison
that info.
from Pip.
which is why
I raised the
issue at our
recent IBM
meeting.
KG

The pile working loads given in Table K incorporate a factor of safety of 1.5 on the ultimate skin and 10.0 on the ultimate base values. The preliminary design is based on the method proposed by *J Lord (1989)*.

The bearing values given in Table K are applicable to single piles. Where piles are to be constructed in groups the bearing value of each individual pile should be reduced by a factor of about 0.8 and a calculation made to check the factor of safety against block failure.

4.2.2 Ground improvement techniques

For the ground and ground water conditions established on the eastern portion of the site the use of ground improvement techniques may well be appropriate and their use could result in cost savings over a piled foundation scheme.

Given the size of the site, the nature of the development and the proximity of existing structures, it is considered that a vibro method is the only ground improvement technique that would prove suitable.

The basic vibro method relies on penetrating the soils with a vertically slung vibrating poker to the design depth and filling the created void with compacted hard granular material. The compaction is achieved by filling the void in stages and re-applying the vibrator. The stone columns and densified surrounding soil form an integrated foundation soil.

In self-supporting soil the granular fill is introduced from the top of the hole and compacted in stages as described. If the hole is not self-supporting, or there are rapid ground water inflows, the stone is introduced through hollow vibrator to the base of the hole, filling and compaction being achieved in stages as the vibrator is removed.

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SAMPLING/IN-SITU TESTING			DESCRIPTION OF STRATA	STRATA			
Depth (m)	In-situ Tests	Sampling		Legend	Reduced Level	Depth m	Thick -ness m
					3.2		
			TOPSOIL				.3
					2.9	.3	
.5		B	Firm light brown fine sandy silty CLAY with abundant well-graded roundfed to angular GRAVEL. (BRICKEARTH)				.7
.8	H 100				2.2	1	
			Well-graded sandy rounded to sub-angular GRAVEL. (VALLEY GRAVEL)		2	1.2	.2
			Off-white orange brown stained block and putty CHALK, with intact blocks up to 5cm spaced up to 5cm. Occasional flints and pockets of greystaining. (WEATHERED UPPER CHALK)				1.6
					.4	2.8	

Ground Water Record

Strike(m)	Rate	Time(hr)	Stand(m)
1.3	slow	nr	nr

Key

- U38 sample
- Core sample
- Perth/Hook Probe 150/75mm inc.

Notes

Pit sides collapsed after 1.0hr

Standing water of 1.8 in pit after 1 hour

PROJECT IBM HAVANT	DATE January 1994	Excavating Plant J.C.B.
CLIENT BLYTHE AND BLYTHE	REF J3403	TP 1
TRIAL PIT LOG		

soils

SAMPLING/IN-SITU TESTING							DESCRIPTION OF STRATA	STRATA			
Depth (m)	Type	Penetration Blows				N		Legend	Reduced Level	Depth m	Thick -ness m
.6	D						Dark grey friable clayey silty sand with rootlets and gravel. (TOPSOIL)		4.2		.5
1	B								3.7	.5	
1.5	P	4	3	2	2	11	Firm to stiff orange to mid brown yellow mottled lightly fissured silty sandy CLAY, with abundant well-graded GRAVEL, becoming more gravelly with depth. (BRICKEARTH)				2
2	D										
2.5	D								1.7	2.5	
3	P	1	1	1	2	5	Loose grey well-graded slightly clayey sandy silty rounded to angular GRAVEL. (VALLEY GRAVEL)				1.3
3.5	B										
4	D								.4	3.8	
4.5	U 43						Off-white block and putty CHALK, becoming more blocky and harder with depth. Occasional Flints. (UPPER CHALK)				
5	D										
5.5	D										
6	P	2	3	2	3	10					
6.5	D										
7	D										
7.5	P	2	3	3	3	11					
8	D										
8.5	D										
9	P	2	2	2	3	9					
9.5	D										
10	D										11.7
10.5	P	2	2	2	2	8					
11	D										
11.5	D										
12	P	3	4	5	8	18					

Ground Water Record

Date	Time	B-Hole (m)	Casing (m)	Strike (m)	Stand (m)	Time

Chiselling Record

T (hrs)	From (m)	To (m)

Casing

Diam.	Depth (m)

PROJECT IBM, HAVANT, HANTS.	DATE DEC/JAN 1993/94	DIAM 150mm
CLIENT BLYTHE AND BLYTHE ASSOCIATES	REF J3403	BH 4 SHEET 1 OF 2
Cable Percussion BH Log		Engineer / Checked

soils LIMITED

SAMPLING/IN-SITU TESTING								DESCRIPTION OF STRATA	STRATA			
Depth (m)	Type		Penetration Blows				N		Legend	Reduced Level	Depth m	Thick-ness m
.2	D							Dark grey brown clayey silty sand with gravel and rootlets. (TOPSOIL)		3.6 3.3	.2	.9
.7	D											
1.3	D							Firm brown and yellow brown mottled sandy silty CLAY, with abundant well-graded rounded to angular gravel from approx 1.1m. (BRICKEARTH)				2.2
1.5	U 30											
1.95	D											
2.4	D											
2.6	D	P	3	3	4	5	15	Firm light orange brown silty sandy CLAY with abundant well-graded rounded to angular gravel and fine chalk fragments. (BRICKEARTH)		1.1 .9	2.4 2.6	.2
3.5	D											
4	B	P	4	3	4	4	15	Medium dense grey brown well-graded sandy rounded to angular GRAVEL, with abundant fine chalk fragments. (VALLEY GRAVEL)				3.3
5.1	D											
5.4	C		5	6	8	6	23					
5.9	B D									-2.4	5.9	
6.1	U 100							Off-white block and putty CHALK, becoming harder and more blocky with depth. Occasional flints. (UPPER CHALK)				
6.5	D											
7	D											
7.5	D	P	2	3	3	3	11					
8	D											
8.6	D											
9	D	P	1	2	2	2	7					
9.6	D											
10	D											
10.6	D	P	2	2	2	2	8					9.7
11	D											
11.6	D											
12	D	P	6	6	6	5	23					

Ground Water Record

Date	Time	B-Hole (m)	Casing (m)	Strike (m)	Stand (m)	Time

Chiselling Record

T (hrs)	From (m)	To (m)

Casing

Diam.	Depth (m)

PROJECT IBM, HAVANT, HANTS.	DATE DEC/JAN 1993/94	DIAM 150mm
CLIENT BLYTHE AND BLYTHE ASSOCIATES	REF J3403	BH 6 SHEET 1 OF 2
Cable Percussion BH Log		Engineer / Checked

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PLANNING AND DEVELOPMENT
SERVICE
10 JUL 1997
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IBM (UK) Ltd

Land at South Moor Havant

Wetland Study Final Report

April 1997

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SUMMARY

A wetland study has been undertaken at Southmoor SSSI. The study has included a review of previous reports together with an analysis of the data obtained during a monitoring period of one year aimed at establishing the physical and chemical characteristics of surface and groundwater flow.

It has been established that the hydrological regime at Southmoor SSSI is dominated by tidal effects owing to the proximity of Langstone Harbour. At high tides, tidal pressure causes chalk groundwater to move upwards into the ditches. In addition the ditches within the SSSI contain water which is derived from surface water runoff principally from the developed areas to the north of the SSSI, water from the drift deposits, and water from Langstone Harbour.

Following the development of a conceptual model and water balance calculations, computational modelling predicted that further development of land to the north and north west of Southmoor SSSI is likely to result in a very slight long term increase in the water levels within the ditches.

Options for future management of the site are presented. The objective of these options, determined in conjunction with expert ecological advice is to increase the quantity of saline water in the south of the SSSI thus maintaining the diverse salt marsh fauna while increasing the quantity of fresh water in the ditches to the north of the SSSI.

1. INTRODUCTION

1.1 Symonds Travers Morgan (STM) were appointed by IBM (UK) Ltd. to undertake a hydrological and hydrogeological impact assessment of the effects of development on land adjacent to Langstone Harbour, a Site of Special Scientific Interest (SSSI). The site is located to the south of the former IBM plant at Havant, which is now owned by Xyratex.

1.2 This report is designed to satisfy the requirements of a Section 106 Agreement under the Town and Country Planning Act entered into by IBM and Havant Borough Council in August 1994, as one of several conditions for development of part of the site (Planning Permission ref no. 93/50238//31). The work undertaken has included intrusive site investigation and monitoring of both surface and groundwater level and quality over a one year period (September 1995 to August 1996) and was divided into two stages. The tasks associated with each stage are summarised below:

STAGE 1

- A Preliminary Review
- B Data Collection Commissioning & Monitoring
- C Installation of Instrumentation

STAGE 2

- D Analysis and Interpretation of Data
- E Numerical Computer Modelling and Development of integrated surface/groundwater numerical model.

1.3 In addition to the original scope of work, the report includes a final chapter which examines longer term water level management options. In conjunction with a report prepared by the Environmental Research and Advisory Partnership advising on several ecological management options, it provides a basis for the preparation of a site management plan. The management plan will be submitted to Havant Borough Council.

1.4 The detailed hydrological and hydrogeological site data was collected so that the principal mechanisms of surface and groundwater flow could be developed. Having identified the principal mechanisms and water balance, a conceptual model was established and used as the basis for the development of a computational model. The computational model was then used to predict the impact that any future development would have on the existing hydrological and hydrogeological regime.

1.5 Several stages of investigation have been carried out by others which were associated with earlier stages of an outline planning application made by IBM (UK) Ltd in 1987 for development of over 15 hectares of land to the south of the Havant plant. Information contained in these reports has been used where appropriate, and their conclusions are summarised in a later chapter.

1.6 A light industrial unit was constructed in 1994/95 in the south eastern part of the developable area and is now owned by Autoliv Limited. This study considers the effect of this development on the SSSI along with the likely impact of development of the area granted outline consent in 1987 (which includes the Autoliv landholding).

1.7 During the course of collecting and analysing the data, advice has been given with respect to proposals to divert the watercourses on the IBM land. Details of these proposals are given in STM Reports:

(i) Preliminary assessment of land drainage effects of Autoliv expansion and review of strategic water issues, November 1995

(ii) Land drainage effects of Autoliv expansion and review of strategic surface water issues, December 1995

1.8 Following preparation of these reports, planning permission has been granted for the extension to the Autoliv Development and to the diversion of the ditches.

2. BACKGROUND

Introduction

2.1 In 1987 IBM were successful in gaining outline planning permission for development of 15.8 hectares of land to the south and west of their existing plant at Havant. In August 1994 they obtained obtaining detailed planning permission for a 3.3 hectare plot to the south of the plant (Borough of Havant No 18838/82). The granting of the planning application followed a 1993 modification of Havant Borough Council's Local Plan for the area which sought to encourage economic growth by earmarking land approximately equivalent to that area of IBM's (1987) planning application for general and light industrial and office development.

2.2 Planning permission was granted in August 1994 to IBM and Autoliv Limited for the construction of a light industrial facility.

2.3 The Section 106 planning agreement linked to the August 1994 permission required a "wetland brief/study and management plan to be prepared and implemented where appropriate".

2.4 There was also concern that, with the original outline application for the development of land extending to the west having lapsed, the current study should be sufficient for the outline planning application to be re-applied.

2.5 The Autoliv facility is the first stage of development within the area identified for commercial and industrial use in 1987. The approximate locations of development and the existing Autoliv facility are indicated in Figure 1.1 which also delineates the margins of the SSSI and some of the topographic features of the area.

2.6 In 1994/1995 IBM sold the operational areas of their Havant site to Xyratex Ltd.

2.7 The requirement for the wetland study was largely, although not exclusively, derived from English Nature's concern over the possible threat that the developments could pose to flora and fauna in the Langstone Harbour SSSI. More specifically an area of approximately 20 acres within Langstone Harbour SSSI known as South Moor (part of which is owned by IBM (UK) Ltd and the rest by a local landowner, Mr R Carrell) was considered to be of greatest ecological value and consequently at greater risk. The earlier studies into the proposed development had concentrated on geotechnical properties of the ground to the north of South Moor, which is why the ongoing investigation has been targeted on the land at South Moor itself.

Historical Landuse

2.8 A history of landuse at South Moor and environs has been undertaken through consultation of Ordnance Survey (OS) maps at scales of 1:10,000 and 1:2,500 and County Series (CS) at scales of 6 inch to a mile and 25 inch to a mile. Table 2.1 summarises the maps used.

Table 2.1 - Historical Maps Consulted

Map	Year of publication
O.S. SU7005 - 7105 1:2500	1969, 1974
O.S. SU70 NW 1:10,000	[1]1963, 1972, 1975
Hants C.S. LXXVI SE, SW 1:10,560	1910, 1930, 1942
Hants C.S. LXVI - 10, 12 25" (1:2534)	1866-67, 1909, 1932

[1]1:10,560

2.9 The following paragraphs describe the landuse history and refer to maps of different scales for each period considered. The maps are included in Figures 2.1 to 2.6, with coverage beginning in 1866

1866-67

2.10 The oldest mapping shows the site in agriculatural use. Even at this early date, the Mill Stream (Lavant Stream) has been diverted from its natural course. The alignment of the two watercourses that lie to the north of and run through the SSSI is similar to the present day situation, the exception being at its northern limit where a sluice is shown adjacent to the Mill Stream. It is probable (but not definitively shown) that historically water was abstracted from the Mill Stream to irrigate the agriculatural land on the SSSI. This artificial flow could have been introduced to compensate for the potential loss of water resulting from a diversion of the Mill Stream. There are a number of water storage areas and Mill Dams present in the general vicinity of Havant.

1909

2.11 South Moor is "a green field" site with two channels which converge within the centre of the present day SSSI. Marshy ground is shown in the south eastern corner of South Moor (where the flap valve provides an outlet to Langstone Harbour today). The Lavant Stream appears as Mill Stream and is dammed behind Langstone Mill (a corn mill). The mill buildings still exist today just outside the boundary of the SSSI. At this point, the map is marked "Highest Point to which Ordinary Tides Flow". The estuary of Lavant Stream forms an area called "Saltings", and the channel continues out into the mudflats. There are no drainage features marked in the pasture land to the west of the SSSI. The drainage catchment for South Moor coincides approximately with the southern face of the current IBM buildings. A spring is marked on Mill Stream opposite Havant Sewage Works, located 600m north of the present SSSI.

2.12 Once again the mapping indicates that the course of the Lavant Stream (Mill Stream) to the east of South Moor has clearly been subject to significant man-made change. The mapping suggests that a "Mill Dam" was previously constructed to the north of South Moor, the mill probably having been located in the small copse to the south west of South Moor. At the upstream limit of this former mill dam, a sluice structure existed which could have been used to artificially irrigate the agricultural land to the north of South Moor. In addition to this artificial "irrigation" system, there is also an arterial drainage system to collect land drainage and convey it to the south east corner of South Moor (presumably collected water was discharged from this point to the Langstone Harbour by means of a tidal sluice device).

1932

2.13 The topography at the south eastern tip of South Moor has changed, with an extension of the embankment now present to the east of the footpath. Groynes have been constructed and the Saltings are no longer marked. Langstone Mill is disused, and the western flank at Mill Stream is marshy from the Old Mill Dam towards the north of the site. There appear to be no changes to the surface water (drainage) regime. Since the gradient of the Lower Garden (Mill Stream) has been artificially shallowed, we would expect that there would have been a tendency for it to silt up.

1942

2.14 Coverage of the site at 25 inch to a mile scale is not available, but according to the 1:10,560 sheet, land (100m x 50m) to the west of South Moor Lane has been excavated. There appear to be no further developments since 1932. This is the first mapping that shows watercress beds and the sewage works to the north of the area under study.

1969

2.15 The 1:2,500 scale plan shows greater detail than was previously indicated on the earlier county series maps with respect to drainage within the current day SSSI. A drain is marked along the southern boundary with a second drain meandering across the southern part of the SSSI, converging with the main drain in the south east corner. The building known formerly as Langstone Mill is now named West Mill. The area of excavation opposite Budd's Wall to the west of South Moor Lane remains.

1972

2.16 The IBM plant had been constructed on land previously occupied by the sewage works together with the industrial estate to the west, along Southmoor Lane. The area of excavated land to the west of South Moor Lane had been filled to above previous ground level (presumably a landfill operation). Housing had been built up along the eastern side of Mill (now Lavant) Stream.

Present Day

2.17 A foul sewer rising main from Hayling Island whose construction date is uncertain runs north to south across the site. This could create a hydraulic pathway through which seawater could perhaps more readily infiltrate the upper geological unit of gravely drift. The anticipated pathway would not be along the inside of the pipe which would be sealed, but along the outside of the pipe, perhaps via backfill material placed around it when it was laid, unless clay stanks were installed at the time of construction.

2.18 Modifications have recently been made to the ditch drainage system to the north of the SSSI. The philosophy behind the proposals has been to maintain, as far as possible, historic lengths of open water course and minimise the length of culverting required. It has been good to maintain the historic land drainage regime particularly with respect to the direction of flow within individual reaches of ditch.

3. SOUTH MOOR SSSI

3.1 South Moor SSSI is part of the Langstone Harbour SSSI which covers a total area of approximately 5,100 acres, including one of the largest areas of mixed saltmarsh in the UK. South Moor comprises only 20 acres of reclaimed silt and is protected by a sea wall.

3.2 The SSSI supports high densities of inter-tidal invertebrates and large populations of migrant and overwintering waders and wildfowl. Eelgrass beds are particularly important for the maintenance of the rich biological diversity. Ecological surveys have been undertaken and have identified that the flora and fauna are extremely dependent on the water balance of the site.

3.3 For further details, refer to the Ecological Statement (Gemmel et al, 1993, Environmental Research and Advisory Partnership).

4. PREVIOUS INVESTIGATIONS

4.1 Several investigations have been undertaken prior to and since the original application of IBM (UK) Ltd for outline planning consent. These are listed below together with a brief summary of findings. Information from these reports has been incorporated in this report where appropriate.

Area south of Havant Plant - Preliminary environmental and hydrogeological assessment. Final Report 1985 Bostock, Hill & Rigby (Report S001).

4.2 The main findings were that "the flora and fauna present in the study area are extremely dependent upon the maintenance of water supply within the site".

Environmental Impact Assessment - Area South of Havant Plant Final Report Volume 1 & 2 1987, Bostock Hill & Rigby (Report S.020)

4.3 This report was the final report in a series of three describing field work and a study undertaken in 1986 to 1987.

4.4 The main findings were:

- Water balance is a complex interaction between runoff, subsurface flow and groundwater flow
- "Groundwater level and, to a lesser extent, groundwater flow are the most important contributory factors to ditch water level, and ditch water level in turn is the primary determinand of flora and fauna."

4.5 It was concluded that impacts of development would be unlikely to be observed on the Langstone SSSI but South Moor SSSI could be subject to a loss of marshy areas and reduction in ditch water levels, temporary increase in ditch water flow and a change in water balance.

4.6 Although the report pointed to the possibility of potentially severe impact of development on the water balance at South Moor, there was little detailed discussion of drainage proposals.

Interim Reports (B H & R, February and September 1986)

4.7 These reports presented information gathered during a one year period of baseline monitoring of surface and groundwater levels. At least 12 boreholes were drilled generally to between 4m and 6m depth primarily to establish geotechnical parameters in the vicinity of the proposed development and also further to the south.

4.8 Although too shallow to assist greatly in providing significant amounts of hydrogeological information, the information gathered is useful in establishing broad hydrogeological conditions at the time of investigation. An attempt to locate the boreholes by STM proved fruitless as it appears that completions were flush to ground level and borehole positions not clearly marked. No borehole completion figures accompany the report which imposes further limitations on the interpretation of information collected.

4.9 Groundwater was observed to flow from the north east towards the south west across the site with a deflection towards the west at high tide.

4.10 Plans were produced illustrating the fluctuation in surface water occurrence through 1986. These are discussed in greater detail in Chapter 8.

4.11 The boreholes are identified in this report in following sections by the original borehole numbers (25 through 36). It is assumed that boreholes 1 through 24 were installed prior to the construction of the Havant plant in the 1970's. No details of these earlier boreholes are given in the reports.

Proposed development of land owned by IBM (UK) at Havant, Hampshire - Ecological Statement 1993 by Environmental Research and Advisory Partnership.

4.12 The findings are summarised in Section 6.0 of the above report and were essentially as follows:

(i) A detailed ecological survey of the site was carried out to assess its ecological importance and to determine the extent of important vegetation types and habitats.

(ii) The most important area is the southern part of South Moor Saltmarsh, within the Langstone Harbour SSSI, which contains a range of reclaimed saltmarsh communities as well as drains and scrub. This area is important for grazing Dark-bellied Brent Geese and as a high tide roost for wildfowl and waders.

(iii) There is semi-improved pasture within the northern part of the SSSI which has little ecological value.

(iv) The unimproved and species-rich pasture immediately to the north of the SSSI is of significant ecological interest. The remaining parts of the site are of minor or negligible ecological value.

(v) The proposed development by Autoliv would have no significant impact on the SSSI. There would be no development within the SSSI and no disturbance to birdlife.

(vi) Although a small area of unimproved and species-rich grassland would be lost, this would be only 10% of its area, and the vegetation could be transferred by turf stripping to another part of the site.

(vii) Even development of the entire site which has outline planning permission would have little ecological impact because no important wildlife habitats would be lost.

(viii) There is scope to apply mitigation measures to protect and improve the important wildlife habitats of South Moor Saltmarsh.

(ix) An important consideration is the design of a landscaping scheme to protect adjacent habitats and to enhance the wildlife value of the area by constructing screening banks, transferring turf, planting scrub, and constructing new field drains.

(x) The management regime of the South Moor Saltmarsh, by drainage control, grazing and/or cutting, should be given careful consideration.

Report on a geotechnical investigation at IBM (UK) Ltd, Langstone Road, Havant, Hampshire for Blyth and Blyth Associates (by Soils Limited) February 1994.

4.13 This was a geotechnical investigation into the subsurface ground conditions within the IBM site. Fourteen boreholes were drilled to between 10m and 30m below ground level along with several trial pits, although no boreholes were drilled within SSSI. The report also contains a limited historical land use survey and reports on the local geology. The investigation was undertaken after a period of heavy rainfall and after the sea wall had been breached and when standing water remained within the SSSI. For the purpose of describing the geological conditions, the site was split into two parts, east and west. To the east, clay was dominant above the gravel, and to the west, brickearth. The focus of the investigation was very much towards establishing the conditions for construction of the proposed unit. The information contained within the report is included in Chapter 6, and borehole locations in Figure 6.1.

Infrastructure Report (IBM Development) DRAFT, Blyth and Blyth Associates 1994.

4.14 This was a relatively detailed report which calculated likely storm flows for the purpose of drainage design for the proposed development. It also included details of the sea wall structure.

Land at South Moor, Havant
Preliminary Assessment and Review of Strategic Surface Water Issues, Symonds Travers Morgan, November 1995.

4.15 This report presented three possible options for modifications to the surface water ditch system in the light of the Autoliv development and future redevelopment. These options are discussed in Chapter 8.

Land Drainage Effects of Autoliv - Expansion and Review of Strategic Surface Water Issues. Symonds Travers Morgan, December 1995.

4.16 An option which differs slightly from the three previously suggested is presented. This would involve the retention of surface water features to the south of the Autoliv factory and the abandonment and replacement of some of the ditch system to the north of the Autoliv development. All surface water drainage from the new developments would be to the ditch system. Details of the drainage to the north of the SSSI are also supplied. While the majority of the roof and hard standing of the IBM plant drains to a ditch to the north of the site, the car park immediately to the north of the Autoliv facility drains to soakaway.

5. FIELDWORK AND MONITORING

Boreholes

5.1 The latest phase of investigations (undertaken by STM) involved the drilling of four groundwater monitoring boreholes to a depth of 10m within the SSSI. the geology encountered is discussed in Chapter 6, and locations are shown in Figure 6.1. Each was completed with two 50 mm piezometers, (comprising 1m to 2 m slotted screen at the base, and inserted to a depth of approximately 8 to 9m and 4m to 5m below ground level (bgl) respectively). The filter surrounding the upper piezometer and the lower piezometer were hydraulically separated with a bentonite seal to ensure that piezometer measurements could be related to discrete strata levels. Completion details are shown in Appendix I and summarised in Table 5.1.

Table 5.1 - Borehole piezometer installation details

Response Zone depth metres bgl	STM1	STM2	STM3	STM4
Upper	3.0-4.4 (reworked chalk)	3-4.8 (chalky gravel)	3.9-5.2 (chalky gravel)	3.7-5.2 (clay and chalky gravel)
Lower	8.5-10.0 (chalk)	8.5-10.0 (chalk)	8.6-10.0 (chalk)	8.1-10.0 (chalk)

Geophysical Survey

5.2 In addition to the intrusive borehole investigation, a surface geophysical survey was undertaken by TerraDat (UK). The objective of the geophysical survey was to provide supplementary information regarding the extent of the saline intrusion within the site and to identify significant geophysical structures.

5.3 As part of the survey, the following tasks were undertaken:

Ground conductivity survey

Measurements of conductivity were collected at 3 hour time windows centred on high and low tide, on a 250m x 250m grid with 10m nodes.

Resistivity imaging survey

This survey investigated the anomalies identified in the conductivity survey, producing 2-dimensional electrical cross sections of the subsurface.

The results of the geophysical survey are discussed where appropriate in the following sections on geology and hydrogeology.

Monitoring and sampling of soil, groundwater and surface water

Initial Chemical Sampling

5.4 An initial detailed suite of analyses was undertaken on both soil, surface and groundwater samples in October 1995. The groundwater samples were collected from boreholes STM1 to STM4. Surface water samples were collected from Lavant Stream monitoring points LS1 and LS2 in addition to sampling points at ditch 1 and ditch 2 which are shown in Figure 9.1. The soil samples were taken from the Lavant Stream monitoring points (LS1, LS2) and sediment from Ditch 1 and 2. The suite of determinands for both soil and groundwater were extensive and included:

COD (Chemical Oxygen Demand)
BOD (Biochemical Oxygen Demand)
Ammoniacal/Kjeldhal Nitrogen
Iron
Zinc
Copper
Nickel
Lead
Chromium
Phosphate
Molybdenum
Arsenic
Vanadium
Beryllium
Barium
Strontium
Mercury

5.5 In addition sampling of groundwater included analysis for volatile organic compounds (VOC's) using gas chromatography/ mass spectroscopy (GCMS). This analysis provided an indication of the presence or absence of over 70 organic pollutants.

Soil Samples

5.6 Table 5.2 summarises the concentrations of potentially contaminating determinands in four soil samples from South Moor SSSI. The ICRCL (Interdepartmental Committee of the Redevelopment of Contaminated Land) guidelines are used as a basis for comparison. Although the ICRCL guideline values are not statutory, they are the most commonly used in the UK when consideration of remediation is required in the context of changes in land use associated with development. The known presence (from site walkovers) of some tipped waste within the SSSI renders the use of these guidelines for comparative purposes relevant. The ICRCL values quoted are threshold values and are chosen to reflect development of a site for open space, (non residential land use). Where a second figure is quoted, it is an "action" value.

Table 5.2 Concentrations of determinands in soil samples from South Moor SSSI, and comparison with guidance values.

Determinand	Range in Samples*	ICRCL*[1]	Dutch*[2]	Comment (High value)
Sulphide		250,1000	-	
Sulphate	0.1 to 1.0	2000,19000	-	
Total Phosphorus	910 to 1500	-	-	
Kjeldahl nitrogen	1680 to 7140	-	-	
Phosphate as P	25 to 53	-	-	
Iron	0.71% to 2.21%	-	-	
Zinc	85 to 510	300	140,720	LS2 Sed
Copper	65 to 150	130	36,190	LS2 Sed
Nickel	15 to 35	70	35,210	
Lead	70 to 460	2000	85,530	
Chromium	20 to 50	1000	100,380	
Cadmium	0.5 to 14.9	15	0,6,12	
Manganese	1.1% to 2.3%	-	-	
Molybdenum	8.4 to 16	-	10,200	
Vanadium	23 to 44	-	-	
Beryllium	<1	-	-	
Barium	10 to 30	-	200,625	
Strontium		-	25,30	
Mercury	<0.1 to 10.7	20	0.3,10	
Arsenic	6 to 10	40	29,55	

* All levels expressed as mg/litre, except where %.

1 Interdepartmental Committee on the Redevelopment of Contaminated Land (threshold, action values): Guidance on the Assessment and Redevelopment of Contaminated Land, 2nd edition ICRCL 59/83. 1987.

2 Dutch Target, Intervention values.(Ruimtelijke Ordening en Milieubeheer: Circulaire internevtiewaarden bodemsanering, May 1994)

5.7 Where no ICRCL values are stated, Dutch criteria are used if applicable. The Dutch criteria are frequently cited in studies of contaminated land and comprise target and intervention levels for concentrations of particular contaminants in both soil and groundwater. High groundwater levels throughout the Netherlands renders contamination of soil and groundwater a particularly important issue and this is reflected in typically more stringent guide levels.

5.8 Concentrations of almost all determinands are well below the ICRCL threshold levels. The threshold levels for copper and zinc are only slightly exceeded in LS2 (a sample from the Lavant Stream). However, the copper concentration is still within the range considered normal for soils as quoted in the Royal Commission for Environmental Pollution's nineteenth report entitled *Sustainable Use of Soil.* These slightly elevated concentrations are not of concern, as they oocur only in one sample. It is not possible to identify a single likely source, but elevated zinc levels could be associated with waste from any number of metal processing works.

Surface and Groundwater Samples

5.9 Table 5.3 shows the range in concentrations of the surface and groundwater samples submitted for analysis. The 1989 Water Supply Regulations provides a comparison of drinking water standards with the quality of surface and groundwaters at South Moor SSSI. Where absent, a guideline value for Dutch standards is given. Only concentrations of manganese and iron exceed the Water Supply standards. Manganese is elevated in all samples, while iron is elevated in borehole STM3.

Table 5.3 Concentrations of determinands in surface and groundwater samples from South Moor SSSI, and comparison with guidance values.

Determinand	Range in Samples*	Water Regs*[1]	Dutch*[2]	Comment
COD	<4 to 28	-	-	Not elevated
Nitrate		50		
Ammonia (ammonia and ammonium ions)	<0.1 to 0.6	0.5		
Phosphate	<0.5 to 0.10	2.2	-	
Iron	0.01 to 3.34	0.2	-	STM3 Upper is elevated**
Zinc	<0.01 to 0.05	5.0	0.065, 0.8	
Copper	<0.01	3.0	0.015, 0.075	
Nickel	<0.01	0.05	0.015, 0.075	
Lead	<0.01	0.05	0.015, 0.075	
Chromium	<0.01	0.05	0.001, 0.003	
Cadmium	<0.005	0.005	0.0004, 0.006	
Manganese	0.43 to 1.74	0.05		All samples elevated**
Molybdenum	<0.05 to 0.08	-	0.005, 0.300	
Vanadium		-	<0.01 to 0.03	
Beryllium	<0.01	-	-	
Barium	0.03 to 0.08	1.0	0.05, 0.615	
Strontium	0.28 to 0.51	-	-	
Mercury	<0.001	0.001	0.00005, 0.00003	
Arsenic	<0.01	0.050	0.01, 0.06	

* All levels expressed as mg/litre, except where %.
1. UK Water Supply Regulations
2. Dutch Target, Intervention Values
** see text paragraph 5.10

5.10 The relatively high manganese and iron concentrations are not considered to be of concern as concentrations in excess of 1 mg/litre of both ions are often associated with organic sediments, particularly in stream beds where some anaerobic decomposition may occur (Study and interpretation of chemical characteristics of natural water, USGS 1992). The topsoil of South Moor is of a peaty (organic) nature, so high manganese and iron concentrations are not unexpected. There are no drinking water supplies in the vicinity of groundwater at South Moor.

5.11 VOC analysis of groundwater samples from boreholes STM1 to STM4 and surface water samples at LS1 and LS2 (Lavant Stream) and Ditches 1 and 2 indicated that all of the 70+ determinands were below detection limit for all samples with the exception of the stream samle at LS2 where trichloroethane concentration was 2µg/L. Trichoroetahne is a commonly used solvent and appears on an EC list of substances for which control of discharge will be

considered. It is probable that the low level of trichloroethane measured in LS2 was the result of a discharge uptream.

5.12 Overall the initial analyses indicated that there was no evidence of significant concentrations of contaminating substances in either the soil or groundwater, the ongoing monitoring programme was set up to include the major ions in ground and surface water only.

Routine Chemical Sampling

5.13 A monthly monitoring programme was implemented to measure concentrations of the major ions (sodium, potassium, calcium, magnesium, sulphate, chloride, bicarbonate and nitrate) in the groundwater from the STM boreholes, surface water from the ditches. Sampling points LS1 and LS2 situated along Lavant Stream were used when ditches 3 and 4 were dry, as was often the case during the summer months. Analysis of the relative concentrations of these ions would yield information on the degree of mixing between the water types and suggest possible sources. Analysis of the data collected is presented in Chapter 8.

Monitoring of physical characteristics of ground and surface water

Water Levels

5.14 Groundwater levels were measured fortnightly in both piezometers in each of the four boreholes. Surface water levels were also measured fortnightly in Lavant Stream and Mill Stream at four locations, two alongside the SSSI, and two upstream towards the IBM facility. The conductivity and pH of groundwater and surface water were measured on a monthly basis.

5.15 The tidal influence on the groundwater level was monitored on four separate days throughout the year by measuring levels at all the boreholes every hour for a duration of over twelve hours (one tide cycle). Electrical conductivity and pH was also measured throughout the tidal cycle on these occasions. Analysis of the data collected is presented in Chapter 7.

Water Flow

5.16 A dedicated flow depth and velocity meter was installed at the outfall of the ditch system at the location shown in Figure 6.1. The outfall is below high tide level. Surface water flows out from the SSSI to the sea at low tide. The outfall is fitted with a flap valve to prevent sea water entering the ditch system at high tide. Water level within the 450 mm outfall pipe and outflow rate are measured automatically, and the data downloaded and processed by In Depth Surveys. It should be noted that measurements were only kept since the flap valve was repaired in November 1995, as prior to this date sea water could enter South Moor SSSI freely with a rising tide due to a faulty seal.

5.17 Flow gauging in the ditches has not been carried out because of the generally dry climatic conditions over the monitoring period, and lack of flow.

Topographical Survey

5.18 A detailed topographical survey of the South Moor SSSI was undertaken by South Coast Surveys. The survey information is included in Appendix IV and is used in the following chapters to assist in the interpretation of the monitoring data and in Chapter 12 for the prediction of impacts of future management options for the SSSI.

5.19 The survey extended considerable distance beyond the SSSI boundaries and is completed on the same grid plan as an earlier survey which was undertaken for IBM on land 'earmarked' for development.

6. GEOLOGY

6.1 Information on the geology of the site was derived from geological maps and borehole logs from several investigations. Geological sections are presented in Figures 6.2 and 6.3. The locations of these sections and of boreholes are given in Figure 6.1. A summary of the geological sequence is shown in Table 6.1 below.

6.2 The most striking feature is the presence of Brickearth above valley gravels to the west of the SSSI, whereas alluvium is present in the east. Both strata rest upon alluvial gravel which overlies the Upper Chalk.

Table 6.1 - Summary of Geology at South Moor

West of Site			East of Site		
Lithology	Depth (m)	Thickness (m)	Lithology	Depth (m)	Thickness (m)
Top Soil	0-0.4	0.4	Top Soil	0.0-0.3	0.3
Brickearth	0.4-2.2	1.9	Alluvium	0.3-1.2	0.9
Gravel	2.2-5.3	3.10	Gravel	1.2-3.5	2.3
Upper Chalk	5.3-20+	14.7+	Upper Chalk	3.5-21.5	18+

Made Ground

6.3 A walking inspection of the SSSI suggests that some of the site, particularly in the southern part towards the sea wall, contains some fill, consisting generally of inert building waste (bricks are predominant). The embankments would appear to contain a high proportion of imported earth and inert fill. Along the southern boundary close to the sea wall the ground is uneven with irregular mounds up to 0.5m in height, containing a high proportion of bottles. (This could be from fly tipping because it is in the vicinity of a former landfill site to the west of South Moor Lane.) The field located to the west of the playing field was a refuse tip in 1970. Several of the field drain banks contain brick and tile fragments and would further suggest that fly tipping did occur. Made Ground is noted between 0.2 and 1.2m in thickness in STM1 to STM4 within the SSSI and is also present throughout the rest of South Moor at a similar thickness.

6.4 Isolated occurrences of Made Ground occur throughout the site and are associated with linear trenches for a gas main which is oriented east to west across the site above the SSSI and a sewer outfall which is oriented north south across the SSSI.

Brickearth

6.5 Brickearth is only described in locations to the west of South Moor SSSI and extending northwards towards the IBM plant. The Brickearth as shown in Sections A-A' and C-C' is generally 2m in thickness usually comprising a grey brown silty clay layer which becomes gravely towards the base. It pinches out towards borehole 32.

Valley Gravel

6.6 The valley gravel most probably represents the position of a former river channel. The gravel is similar to the alluvial gravel which is described below.

Alluvial Clay

6.7 The alluvium typically comprises silty clay and is present in the east of South Moor SSSI extending northwards in the vicinity of the drains. Its thickness varies from the sides of the SSSI from 1m to 2m. The greatest thickness of alluvial clay occurs in the playing field to the west of the SSSI. Alluvial clay is largely absent in a triangular area in the centre of the study area, much of which is now covered by the new Autoliv facility. At trial pit and borehole locations in these areas the drift deposits tend to be a coarse gravel grade.

6.8 The base of the alluvial clay or the clay within the Brickearth fluctuates generally between 0m and 2m above Ordnance Datum (AOD), although in the south of the SSSI the base of the alluvial clay is 0m to 0-0.5m AOD.

6.9 Peat has been identified in one or two trial pits and boreholes associated with the alluvial clay. This is indicative of former fresh water deposition in the area.

Alluvial Gravel

6.10 The alluvial gravel typically consists of loose to medium dense light grey well graded rounded to subangular sandy gravel with a high proportion of chalky matrix lying directly above the chalk. Although absent in certain locations (STM3, BH7) the thickness is typically 2m to 4m. The alluvial gravel contains clay lenses.

Upper Chalk

6.11 The site is underlain by Upper Chalk, which at this location dips towards the south west at approximately 12° outcropping to the north, 0.5 km from the site where it forms the east-west heading Portland Anticline. The top 1m to 2m consist of a weak putty chalk becoming harder and more blocky with depth. The top of the Upper Chalk is typically between -2m and -4m AOD in the vicinity of the SSSI with a gentle slope towards the south west. At STM1 the true top of the chalk is assumed to be at -3.1m, the 1.5m of chalk above may have been reworked. It is possible that the base of the chalk forms a linear depression underneath the SSSI, representing the location of erosion associated with an earlier channel within the SSSI.

7. PHYSICAL HYDROGEOLOGY

Introduction

7.1 Groundwater occurring beneath South Moor SSSI and its environs is associated principally with the Upper Chalk (representing the major aquifer further inland) and with the alluvial drift deposits which overlie the Upper Chalk and which are in hydraulic continuity with surface water courses. The drift consists of deposits of gravels and clayey gravels with some clay layers.

7.2 Completion details of the boreholes drilled prior to 1995 indicate that no attempt was made to isolate groundwater within the separate geological units (ie. Upper Chalk and overlying drift strata). Consequently the groundwater levels obtained represent an "average" value, and can be considered to broadly represent groundwater levels within the drift deposits.

7.3 A seasonal fluctuation in groundwater levels is observed in boreholes 26, 32 and 36 in the study area, as illustrated in Figure 7.1. These boreholes were installed during the investigation of 1986. Borehole 26 is the furthest north of the SSSI located 100m from the IBM Plant facility. Borehole 36 is located immediately to the north of the SSSI. Groundwater levels are generally higher in winter and lower in summer.

7.4 A seasonal fluctuation in groundwater level is also observed although on a much larger scale at the Environment Agency's Catherington and Hinton Daubnay observation boreholes completed in the Upper Chalk approximately 9.5km to the north of the site. Hydrographs of the groundwater levels observed in these boreholes are shown in Figures 7.3 and 7.4.

7.5 Groundwater level data from 1989 was augmented with data from the boreholes installed in 1995 within the SSSI to provide a water level contour map across the area, as shown in Figure 7.2. It is acknowledged that combining groundwater levels taken in different years is not ideal, however in the absence of up to date groundwater levels away from the SSSI, this was necessary in order to determine a hydraulic gradient. The gradient was 0.004 from north to south across the site.

7.6 Water level monitoring data at the STM boreholes also indicate a seasonal effect. In Figure 7.5, STM4 and STM3 demonstrate higher water level over the winter months. This corresponds to the seasonal response seen in the boreholes discussed above, although much more subdued. The effect is virtually negligible in STM1 and STM2 which are nearer Langstone Harbour.

Groundwater in the Upper Chalk

7.7 The regional hydraulic gradient within the Upper Chalk trends north-east to south-west. The gradient is illustrated by comparing water levels observed at the Catherington and Hinton Daubnay boreholes and those observed in the piezometers on site. Water levels at the EA wells are of the order of 40 m AOD compared to approximately sea level at the site, indicating a regional hydraulic gradient of approximately 0.005.

7.8 Groundwater levels measured in the lower piezometers of the four new boreholes installed within the SSSI indicate that the Upper Chalk aquifer is artesian, with a degree of confinement by the overlying drift deposits. Hydrographs of these piezometers over the study period are shown in Figure 7.5. The hydraulic head within the Upper Chalk (and the drift) is above the top of the chalk in each of the four boreholes, and is often above the groundwater level within the Drift. As shown in Figure 7.3, at piezometers STM 2 and STM3, the head in the Chalk is above that in the Drift most of the time. This upwards hydraulic gradient indicates an upward flow component and suggests that the Upper Chalk is a source of recharge to the overlying drift deposits.

7.9 Groundwater levels fluctuate by up to 0.5m seasonally, and similar fluctuations in groundwater levels are observed across most of the boreholes. In contrast, seasonal fluctuations at the inland EA boreholes are of the order of 10 metres. Although hydrograph fluctuations are influenced by a number of factors such as porosity, the much smaller fluctuations at the coast are principally due to the buffering effect of the sea which over the long term (longer than tidal cycles) represents a constant head.

Permeability

7.10 Permeability tests in the Chalk were undertaken in boreholes 8, 10, 12 and 14 of the 1994 investigation and in the boreholes which were completed in 1995. The 'slug' test method was used with analysis using the Hvorslev (1951) formula. The values obtained were in the range 0.3 to 0.01 m/day. These values are significantly lower than the value of 10m/d used for the Chalk in the calibrated computer model. The accuracy of the tests may have been affected by tidal influences on water level during the test. In addition, permeability at point locations are not necessarily representative of the overall average permeability of a geological unit.

Tidal Influence

7.11 Groundwater levels in the Upper Chalk are influenced by tide levels. Monitoring of groundwater levels within the piezometers installed in 1995 within South Moor SSSI was undertaken on four occasions over a 12 hour tidal cycle as shown in Table 7.1.

7.12 The magnitude of the tidally induced variation in groundwater levels in the STM boreholes is fairly constant through time, although some variation in levels over the long term is observed. A comparison of the magnitude of the tidal influence on the four dates is given in Table 7.1. The longer term seasonal response is illustrated in Figure 7.5. All the groundwater levels are within the drift layer.

Table 7.1 Fluctuations in Chalk Groundwater Levels within South Moor SSSI

Piezometer	Groundwater level change due to tidal influence (m)				Average
	23 August 1995	**31 August 1995**	**11 December 1995**	**14 May 1996**	
STM1	0.67	0.79	0.79	0.79	0.76
STM2	0.34	0.40	0.46	0.40	0.40
STM3	0.21	0.26	0.27	0.22	0.24
STM4	0.16	0.20	0.25	0.20	0.20

This data is shown in Figures 7.6 to 7.9

23 August 1995 (Figure 7.6)

7.13 All the piezometers in the Upper Chalk respond to the tidal cycle. Tidal fluctuations were greatest in STM1, decreasing to a minimum at STM4. The amplitude of the tidal influence decreases, as expected, away from the Langstone Harbour.

31 August 1995 (Figure 7.7)

7.14 Tidal fluctuations were again greatest in STM1, decreasing to a minimum at STM3 and STM4.

11 December 1995 (Figure 7.8)

7.15 Tidal fluctuations were again greatest in STM1, decreasing to a minimum at STM4.

14 May 1996 (Figure 7.9)

7.16 High tide locally was estimated at 10.40 am (high tide at Portsmouth was 8.53 am). This was based on the observations of water levels at the nearby bridge over the Lavant Stream. The fluctuation in level was greatest and response quickest in STM1, with a peak occurring 1.5 hours after high tide. At boreholes STM2, STM3 and STM4 the peak occurred 3 hours after high tide.

7.17 In conclusion it appears that the chalk groundwater level responds to the tides with the effect decreasing inland.

Corrections for tidal influence

7.18 The evidence that groundwater levels in the Upper Chalk are affected by tides suggests that to observe the longer term response, corrections should be applied to the monitoring records, as given in Figure 7.5. In this figure, dates on which monitoring over a tidal cycle was carried out are represented by dots closely overlain in a vertical line. These clusters show that the fluctuations observed throughout the monitoring period are generally within the range of the tidal influence. Accurate filtering out of the tidal effect would give a truer representation of the long term response.

7.19 An attempt was made to filter out tidal effects on the longer term hydrographs from the STM piezometers. The following formula was used (Todd,1980):

$$\text{Corrected level} = \text{Measured level} - (A \times 0.5 \times \sin 2\Pi [(t - t_L)/t_0])$$

where:

A = Amplitude of water level fluctuation caused by tide
t = time from start of tidal cycle
t_L = tidal time lag of piezometer
t_0 = period of tide cycle

7.20 On the four dates that piezometers were monitored over a tidal cycle, average values for A and t_L were determined (Table 7.4). For each monitoring point, t and t_0 were determined from tide tables. The tide period varies from 12 hrs 11 min to 12 hrs 53 min. Using the above formula, trial "corrections" were applied to the water level data of STM1 lower piezometer. The results are given in Figure 7.10. As can be seen, the "corrected data" is far from perfect. If the method worked satisfactorily, the corrected water levels for days that tidal cycles were monitored would be flat, which is not the case, except for 14 May. This is because the amplitude and lag on this day were very similar to the average values used in the formula. The corrected data for the full long term hydrograph (bottom graph) does not show smoothed data. In conclusion, tidal corrections can not be applied principally because of the variation in time lag for each piezometer through the year. The size of the lag may be dependent on a number of factors. One may be the rate of groundwater flow toward the coast which would vary seasonally.

Table 7.3 Amplitude of tidal influence (A) and time lag of response (t_L) in STM piezometers

	23 Aug 95		31 Aug 95		11 Dec 95		14 May 96		Mean	
Piezo	A (m)	t_L (h:min)	A (m)	t_L (h:min)	A (m)	t_L (h:min)	A (m)	t_L (h:min)	A (m)	t_L (h:min)
STM1 upper	0.44	2:37	0.60	2:54	0.36	2:12	0.40	1:54	0.45	2:24
STM1 lower	0.80	1:51	1.00	2:44	0.80	1:36	0.84	1:22	0.86	1:53
STM2 lower	0.48	3:57	0.56	4:06	0.40	3:36	0.40	3:06	0.46	3:41
STM3 lower	0.28	3:57	0.32	4:24	0.28	3:54	0.28	3:24	0.29	3:55
STM4 lower	0.24	4:09	0.28	4:36	0.20	3:54	0.22	3:24	0.24	4:01

Groundwater in the drift deposits overlying the Upper Chalk

Permeability

7.21 Permeability tests were undertaken in alluvial drift strata following the drilling of boreholes STM2, STM3 and STM4. From calibration of the computer model, an average permeability on the drift layer of 20m/d was derived. As discussed for Chalk permeability, tests may have been influenced by tidal effects, and point test data is not necessarily representative of the average permeability of the layer as a whole.

7.22 It would appear that the assessment of permeability through the Hvorslev technique is not more suitably applied to the drift deposits than to the chalk. However the results obtained are still considered low for drift strata.

Tidal Influence

23 August 1995

7.23 There is virtually no change in groundwater levels in the drift in boreholes STM2 and STM3. There is a slight change in STM4 corresponding to tidally influenced changes in the Upper Chalk. The hydraulic head within the Upper Chalk is at all times higher than water levels in the Drift.

31 August 1995

7.24 Although measurements were taken during a low tide cycle rather than a high tide cycle, the responses are similar to those on 23 August. The hydraulic head in the Chalk is always higher than the water level in the drift.

11 December 1995

7.25 Groundwater level are generally higher than in August. In STM3 and STM4, the hydraulic head in the Chalk falls to below the water level in the drift.

14 May 1996

7.26 The responses are very similar to those observed on 11 December.

Correlation of Groundwater Levels and Rainfall

7.27 Rainfall data are included on Figure 7.5 alongside water level hydrographs for the STM piezometers. Although immediate responses can not be assessed as water levels were measured approximately fortnightly, it appears that there is generally a rise in groundwater levels in both the drift and chalk after wet periods.

7.28 The effect of rainfall on chalk groundwater level is difficult to quantify due to the tidal response. However, it appears that during the month of September, a considerable rainfall event corresponds with a general rise in groundwater levels in the chalk piezometers.

7.29 Within the drift however, tidal influence is less marked, and the shallow piezometer of STM2, (in addition to both piezometers at STM3 and STM4) experiences a rise which seems to correlate with rainfall events which occurred in early September and early November.

7.30 This information suggests that rainfall recharge is an important factor in contributing to the groundwater level within the Drift and consequently water within the ditches.

7.31 A more detailed analysis of the relationship between rainfall and surface water hydrology is presented in Chapter 8 which includes consideration of the volumes of water discharged to Langstone Harbour through the flap valve.

8. SURFACE WATER HYDROLOGY

Introduction

8.1 For the purpose of this study it is necessary to consider surface water conditions at the site prior to development of the Autoliv plant in 1995, the effect of the Autoliv plant on the water balance and finally the likely effect of the completed proposed future development.

8.2 The site falls within the surface water catchment of the Lavant Stream which discharges into Langstone Harbour to the south east of South Moor SSSI. STM undertook catchment analysis in 1994 for the Lavant Stream. The catchment total surface area was 42 km² of which 5% was urban/paved. The mean annual flood was 1.4 m³/sec with a 1:100 year flood calculated as 4.33 m³/sec.

8.3 A large proportion of the site is considered to fall within the flood plain of the Lavant Stream. The NRA (now Environment Agency) calculated that the 1:1000 tidal flood water level would be 3.59m, and consequently recommended that floor levels of any proposed buildings be above this height.

8.4 The drainage catchment of the ditches which are present within the SSSI and further north is the most important area for this study. It is assumed that all surface water runoff from paved and unpaved areas within this catchment will collect in the ditches which have only one outlet, to Langstone Harbour estuary via a single flap valve. Any change in surface water runoff caused by construction of new premises is therefore considered to be manifested only by increased runoff to the ditch system which may in turn contribute to recharge of the Drift, and a local increase in groundwater levels.

8.5 A surface water discharge direct to the Lavant Stream was considered for the development. However a discharge to the Lavant Stream was not considered feasible as the NRA would have required the installation of storage ponds to accommodate storm flow from ditches prior to discharge to the Lavant. Storage ponds would have to have been accommodated on high ground and would not have been considered practicable.

Surface Water Hydrology (Pre 1995)

8.6 The locations of ditches and surface water courses are indicated in Figure 8.1 which also shows where ponding of surface water is observed on a regular basis.

8.7 Part of the IBM plant drainage enters the ditch system. Drainage from the northern part of the plant is pumped directly to the Lavant Stream. The drains of South Moor eventually discharge into an arterial watercourse that discharges into the Lavant Stream at the south east corner of the site. This is the only connection between surface water in the ditches and Lavant Stream. However, observations during site visits confirm that a disused sewer main which runs parallel to the Lavant Stream at the eastern boundary of the site may be open and subject to inflow at high tide.

8.8 The total area of hard standing from which runoff discharges direct to the ditch system is approximately 24,500m².

8.9 Until November 1995, the flap valve which permitted flow from the SSSI into the Lavant Stream, with no reverse flow (from the tide) was not operating properly. Saline water would infiltrate the site at high tide. In addition, tidal waters have been observed entering the SSSI through the sea wall. During exceptional high tide events in winter it has been observed that overtopping of the sea wall results in flooding of the southern part of the SSSI.

8.10 The study of 1985 to 1987 included a qualitative mapping exercise showing areas of standing water at different periods throughout the year of 1986. Figure 8.2 is a reproduction of six of these plans. Although as expected the land is drier in the summer months with very little ponding of water other than in the centre of the site, changes occur over very short intervals. For example the ponding of water between mid May and the end of May is substantial whereas by mid June, the site would appear to be at its most dry. This appears to reflect changes in monthly rainfall patterns as measured at Havant Waterworks (elevation at 8 m AOD, located 1.1km to the north of the site), and summarised in Table 8.1. It is noted that there was extensive ponding in August, which is assumed to have been due to heavy rain in early August (rainfall records not available).

Table 8.1 - Rainfall Recorded at Havant Waterworks September 1985 to July 1986

Month	Total (mm)	2nd Half of Month (mm)
September 1985	24.9	2.0
October 1985	20.9	0
November 1985	49.4	29.8
December 1985	73.9	27.5
January 1986	134.9	35.1
February 1986	6.0	1.0
March 1986	77.2	58.5
April 1986	59.3	32.1
May 1986	69.6	49.2
June 1986	25.1	12.7
July 1986	33.6	12.3

Ditch Water Levels

8.11 Ditch water levels were measured between April and October 1986. Monitoring locations are shown in Figure 8.3a. Graphs of water levels in Ditches 3, 5 and 6 are given in Figure 8.3b. Monitoring locations are given in Figure 8.3a. (Note that these ditch numbers are different from those used by STM). The levels vary in each ditch with a similar trend, and there is evidence of a quick response in water level within the ditches corresponding to heavy rainfall events, for example all the ditches show a marked increase in level coinciding with heavy rain from 19 May to 22 May. Elevated ditch levels also correspond to heavy rainfall in mid August. Figure 8.4 also shows corresponding groundwater levels in some boreholes. Of note is the similarity in response between surface water and groundwater levels confirming that the systems are very closely associated.

Surface Water Hydrology (Post 1995 Autoliv Factory)

8.12 The construction of the Autoliv works resulted in the diversion of two drains around the perimeter of the Autoliv site. Certain plant species (such as orchids) were transplanted to other parts of the area to the north of the SSSI. The works were constructed such that all surface water runoff from the development was diverted to the new ditches. Figure 8.4

illustrates the changes in ditch layout resulting from the new development. Provision was made for balancing ponds. The existing Autoliv development (circa 1996) is to be extended to the west in accordance with the 1996 Planning Consent. Consequently the opportunity has been taken to make strategic modifications to the existing ditch system so that they will be capable of providing for future development requirements and provide an element of environmental enhancement.

8.13 The changes which directly affect the hydrology of the site are tabulated below in Table 8.2. Any increase in impermeable areas (hard standing) is incurred through the development of the Autoliv facility and South Moor Access Road.

Table 8.2 - Changes in Landuse 1995

Development Activity	Result
Building Autoliv Facility	Add 29,250 m² hardstanding
Building Access Road	Add 3,560 m² hardstanding
Diversion of ditches (1)	Loss of approx 350 m of ditches
Diversion of ditches (2)	Gain of approx 610 m of ditches

8.14 The total amount of hardstanding which drains to the ditches as a result of the development is 57 280 m^3 representing an increase of 2.34 times.

8.15 In order to calculate the average amount of extra runoff generated it is necessary to evaluate meteorological data in such a way as to consider losses due to evaporation and evapotranspiration. This information was obtained from the Met Office, and is considered in Chapter 10.

Surface Water Hydrology (post future development)

8.16 If the future development goes ahead under the most recent proposals for watercourse management, as illustrated in Figure 8.5, the length of open channel will increase by 65m and the length of culverted section will increase by 180m.

8.17 The addition of a further wing on the Autoliv plant will add approximately 10,200m² of hard drainage area. Further developments to the west and north of the future development will add 60,730m² of hard drainage area.

Tidal Monitoring at Outlet Valve of SSSI

8.18 There is a single point of outflow from the ditch system to the sea, via a 450 mm diameter concrete pipe at the location shown on Figure 6.1. An assessment of the pattern and volumes of flow is therefore important to understanding the site's hydrology. The ground elevation of the site toward the coast is between high and low tide levels. This means that at low tide, surface water may drain from the site to sea. Without a valve, at high tide, seawater would flood back into the site. However, a flap valve fitted to the outlet pipe which is closed by the pressure of the rising tide, prevents seawater ingress.

8.19 Between March 1994 and October 1995 the valve was not in working order. Seawater flooded into the lower parts of the site at every high tide. The result was that the vegetation may have been affected by the salinity of the water leading to some change in its type and distribution. When the fault was discovered, arrangements were made for its repair and it now works correctly. Vegetation distribution should gradually return to its original state.

8.20 With the valve in working order, there is a fairly distinct pattern to the outflow of surface water from the site. This is discussed in some detail below with reference to a number of illustrations.

8.21 In November 1995 an automatic logging device was fitted at the outlet. The device measures surface water depth and flow velocities of discharge to Langstone Harbour. Flow volumes can be calculated from this data.

Flow characteristics at outlet

8.22 An understanding of the flow pattern through the outlet pipe has been achieved from observations on site and an analysis of the flow and water depth data.

8.23 At high tide the flap valve is forced shut by the outside pressure of the seawater. During this time, a depth of surface water builds up in the ditch behind the valve. This surface water originates from flow along the network of ditches, all of which drain toward the outlet point. As the tide recedes, the flap valve opens, allowing the surface water to flow out. This cycle is repeated every tidal cycle. Superimposed on this regular cycle are the effects of recharge events (rainfall or sea wall overtopping)which cause an increase in outflow.

Origins of surface flow

8.24 There are considered to be two main sources to the surface water flow at the outlet valve.

(i) Direct surface water run-off.
When it rains, run-off collects in the ditches which then transport the water toward the outlet. A proportion of this flow originates from hardstanding at the Autoliv and IBM facilities outside the SSSI.

(ii) Groundwater seepage.
For much of the time, water within the ditches is static, the water level being associated with the surrounding groundwater level. When groundwater levels rise, seepage into the ditches results in flow along them towards the outlet. In general, groundwater levels rise after rainfall events due to recharge. There is also a rise and fall in groundwater level during each tidal cycle, as illustrated in the hydrographs of Figures 7.6 to 7.9. Each rise causes seepage into the ditches which is considered to represent a major component of surface water flow to the outlet.

In addition it has been noted that overtopping of the sea wall occurs occasionally resulting in inundation of sea water within the SSSI. Some seepage through the sea wall does occur, as well as ingress through a disused sewer on the eastern side of the SSSI during high spring tide events.

Cyclic pattern - Daily cycle

8.25 The typical flow pattern at the outlet is illustrated in Figure 8.6. This shows flow rate, water depth, tide level and daily rainfall over a period of seven days in January 1996. The tidal level shows two cycles per day as would be expected. Closure of the flap valve is represented by periods where flow rates are zero. During these periods surface water levels behind the valve rise, initially very quickly, and later more slowly. Typical maximum depths are 60 to 100 mm. At a point about two hours after high tide, the valve opens resulting in a very rapid outflow for a very short period, creating a spike on the graph, with a rapid fall in the surface water level. At low tide, the valve remains open with a more gradual recession in the rate of flow. Eventually the flap closes again as the tide starts to rise and the cycle is repeated.

Cyclic pattern - Monthly cycle

8.26 Daily rainfall data for Havant was provided by the Environment Agency, for the period July 1995 to July 1996. The gauge is located at the offices of the Portsmouth Water Company 1.1km to the north of the SSSI (Grid Ref SU 711 063).

8.27 It is observed that after rainfall events on 6th and 8th January, there is an increase in the water depth and subsequent outflow, demonstrated by the higher spikes when the valve opens in the early parts of 7th and 9th January.

8.28 During the latter part of 6th January, an increase in flow is observed while the flap is open. Although more detailed rainfall data is not available, it is probable that this is a direct response to run-off from rainfall occurring at this time. A similar effect is observed in the latter part of 8th January.

8.29 After the rainfall of 8th January, the data shows a recession over the following two or three days, due to a gradual reduction in ground and surface water storage.

8.30 Perhaps some of the clearest evidence that groundwater fills the ditches and contributes to flow through the flap valve is present in Figure 8.7. Low flows through the flap valve are observed at monthly intervals from the end of June 1996 to the end of September 1996. These outflows do not all correspond to periods of antecedent rainfall, and the regularity supports the hypothesis that groundwater seepage into the ditches in the southern part of the site, increases during the higher spring tides (every second spring tide period). There are intermediate, but much less significant increases in fow, corresponding to the smaller spring tides.

Flow volumes

8.31 Daily flow volumes, calculated from the depth and flow rate data, are given in Figure 8.7 for the period 3/11/95 to 05/11/96. This data shows a significant variability in daily surface water outflow volumes from the site, from almost zero to 2250 m^3/d. The average daily outflow is 138 m^3/d. Daily flow volumes show a fairly strong, though imperfect correlation to rainfall. A direct increase in surface water run off during and immediately after rainfall is demonstrated by the sharp spikes in flow volume coinciding with rainfall events. The daily flow volume typically remains high for several days after rainfall events, for example around the 7th January, Figure 8.6. This appears to represent a recession in flow due to the gradual decline in groundwater and surface water storage. As discussed above, much of the ditch flow originates from groundwater seepage. It should be noted that average values are affected by the significant ingress of seawater by overtopping of the bunds during spring tide events.

8.32 There are occasions when significantly increased outflows do not appear to correspond to high rainfall, for example during the period 17/11/95 to 18/12/95 . This is believed to be due to the effects of exceptionally high tides. During a site visit on 24th November, it was observed that water was flooding over the eastern boundary of the site from a very high level in the River Lavant Stream during high tide. Although stream water rather than seawater was flowing into the site, the high stream level is believed to have been caused directly by the high tide causing it to back up and overflow its banks. Unfortunately, tidal records are not available to formally confirm this. In some cases, poor correlation with rainfall data may be due to the fact that the rain gauge data (from Havant Water Works) does not necessarily represent actual rainfall at the site, although it is in close proximity.

8.33 There are also occasions when exceptional tides are high enough to cause a breach of the sea wall. This was observed on occasions during the winter of 1995.

8.34 Using the topographic survey undertaken in 1996, it was possible to identify a low point along the bank adjacent to the Lavant Stream. Near the mouth of Lavant Stream the level of the top of the embankment is 2.36m. The sea wall at the south of the SSSI is generally in excess of 3m in height. This low point is an obvious point of ingress for sea water at exceptionally high tides as was observed during a site visit in December 1995. The survey is included in Appendix IV.

Tide Levels

8.35 It had been proposed to monitor tide levels using results form the gauge installed at Langstone Harbour. However, throughout the period of the study, the gauge readings were not reliable and so it was decided that calculated tide tables should be used in analyses.

9. HYDROCHEMISTRY

Introduction

9.1 Sampling for the major cations and anions was undertaken on a monthly basis from September 1995 at the boreholes (STM 1 - 4) installed in 1995, and at four ditches (ditches 1 to 4) or alternative locations on the Lavant Stream (LS1 - 2) when the ditches were dry. Sampling locations are shown in Figure 9.1. Chemical analyses are indicated in Appendix III. Sampling was undertaken on the following dates:

2 September 1995	4 March 1996
6 October 1995	21 March 1996
3 November 1995	8 May 1996
1 December 1995	6 June 1996
8 January 1996	4 July 1996
5 February 1996	18 August 1996

(On occasion an alternate location was selected if a particular ditch was dry)

Comparison of water types through the use of Durov plots.

9.2 The major ion chemistries of groundwater from both the upper and lower piezometers of boreholes STM1 to STM4 are represented on Durov diagrams in Figures 9.2 and 9.3. Figure 9.4 represents surface water samples from ditches 1 to 4.

9.3 A Durov diagram is a way of displaying waters of different chemical types and some processes such as mixing. The plotting position is defined by the *relative* concentrations of major ions rather than the absolute concentrations. The major ions, representing the dominant chemical ions in natural water are calcium, magnesium, sodium, chloride, sulphate and bicarbonate.

9.4 The Durov diagram can be divided into nine fields (numbered 1 to 9 from top left to bottom right). Two that are of particular relevance to this study are that in the top left corner, and that in the bottom right corner. The former are bicarbonate and calcium dominant, usually indicating recently recharged waters, particularly in limestone or chalk aquifers. The latter are chloride and sodium dominant often indicating a seawater source.

9.5 The Durov diagrams in Figures 9.2 and 9.3 include samples from various dates collected from both the upper and lower piezometers of each STM borehole.

Groundwater from boreholes STM1 and STM4

9.6 Figure 9.2 depicts the major ion chemistry for boreholes STM1, located close to the outfall of the SSSI near the Lavant Stream, and borehole STM4 located the furthest from Langstone Harbour. Waters of the two boreholes have opposing characteristics, each plotting in different parts of the diagram.

9.7 For each borehole, there appears to be no significant difference in the chemical characteristics of waters from the upper and lower piezometers. The similarity between the compositions of waters from both piezometers within each borehole is not unexpected, as the upper piezometer response zone largely comprises a gravel and clay drift overlying the Upper Chalk. This similarity indicates hydraulic continuity between the two lithological units.

9.8 Samples from STM1 plot in Field 9 due to a dominance of sodium and chloride ions, reflecting the proximity of seawater. Samples from borehole STM4 plot within Field 1

(calcium and bicarbonate dominant), more typical of relatively recently recharged waters in chalk.

Groundwater from boreholes STM2 and STM3

9.9 Figure 9.3 shows groundwater with less distinct characteristics. The chalk groundwaters from the lower piezometer of STM3 plot within Field 1, the same as waters from STM4 on Figure 9.2, indicating recently recharged fresh waters.

9.10 Despite a similar completion to STM4 with the upper piezometer in drift directly overlying chalk, the waters in the upper STM3 piezometer show different chemical characteristics. The spread of composition across diagram indicate a degree of mixing with more saline waters. This may be due to the proximity of STM3 to the unused sewer in the east of the site, or the low point in the embankment when overtopping occurs.

9.11 The upper piezometer of borehole STM2, completed in drift, displays similar characteristics to both piezometers STM1, namely dominance of sodium and chloride most likely due to a seawater origin. The spread of data points for the lower piezometer in the Upper Chalk indicates mixing between saline waters and fresher groundwater.

Surface water from ditches

9.12 Surface water samples collected from the ditches were also plotted on a Durov diagram as shown in Figure 9.4. The sampling locations are given in Figure 9.1. Ditch 1 and Ditch 2 samples all plot in Field 9, showing a dominance of sodium chloride, indicating waters of seawater origin. Most Ditch 3 samples plot in Field 1, indicating fresh waters. One sample from December plots further down indicating that some degree of mixing with more saline waters may sometimes occur. This could be due to the tide overtopping the sea wall and inundating the lower part of the site. Samples from Ditch 4 plot as a scatter across the diagram indicating a greater degree of mixing. Mixed type waters are a characteristic of the upper piezometer in STM3 finished in the drift. This similarity of Ditch 4 waters supports other evidence that ditch waters originate principally from adjacent groundwaters rather than runoff from off the site.

Electrical Conductivity Measurements

Electrical conductivity in groundwaters

9.13 Electrical conductivity (a measure of the quantity of dissolved ions) was measured in the field at boreholes STM1 - 4 during regular monitoring visits. Table 9.1 summarises the electrical conductivity (EC) measurements from each piezometer.

9.14 The lower piezometers of installations STM3 and STM4 record EC values corresponding to a fairly fresh groundwater. This result correlates with indications from the Durov diagrams that these waters are "fresh". The higher EC measurements in the lower piezometers of STM1 and STM2 correlate with the evidence from the Durov diagrams that this is more saline groundwater due to the proximity of sea.

Table 9.1 Electrical conductivity in STM piezometers (µS/cm)

	STM1	STM2	STM3	STM4
Upper Piezometer	9,000	15,000	1,200	800
Lower Piezometer	1,800	2,000	800	800

9.15 The EC measurements for the upper piezometers correlate with the compositions on the Durov diagrams. Upper piezometers in STM1 and STM2 are completed in saline groundwater, STM3 is mixed, STM4 is fresh with compositions almost identical to the deeper piezometers.

Electrical Conductivity in the Ditches

9.16 Table 9.2 is a summary of typical EC levels measured at the ditch monitoring points since fortnightly monitoring commenced in August 1995.

Table 9.2 Electrical Conductivity measurements in ditches (μS/cm)

	Ditch 1	Ditch 2	Ditch 3	Ditch 4	LS1	LS2
Typical Value	7,000	6,000	1,000	600	600	550
Maximum Value	>20,000	>20,000	8,400	829	>20,000	776
Minimum Value	4,600	5,000	780	540	280	330

9.17 EC values in the surface waters are much more variable than those of groundwaters. This reflects their increased susceptibility to short term influences such as dilution from rainfall runoff. The very high maximum values for Ditches 1 and 2 (>20,000μs/cm) were measured on a day (20/12/95) during which water was seeping into the site from Lavant Stream. The Lavant Stream (at LS1) recorded EC values >20,000μs/cm on the same day. There must have been an exceptionally high tide which pushed saline water upstream and high enough to overflow into the site. The unusually high EC of 8,400μs/cm in Ditch 3 was also recorded on the same day. Apart from this exceptional event, EC values measured in the ditches, as with the groundwater results, show relatively good correlation with the conclusions drawn from the Durov diagrams. Waters in Ditches 1 and 2 are saline type waters, plotting in Field 9 on the Durov diagram. Ditch 3 plots as a fresh type water on the Durov diagram. However, the EC values in Ditch 4 seem low considering that the Durov diagram indicates a degree of mixing with more saline waters. The values at LS2 are consistently low and indicate that the Lavant Stream is not tidal at this point, other than in exceptional circumstances.

9.18 It should be noted that chemical monitoring undertaken during the investigation of 1985-7 was aimed at assessing the possible presence of contamination, and were not designed to assess the chemical characteristics and variation in surface and groundwater quality.

10. CONCEPTUAL MODEL AND WATER BALANCE

10.1 The purpose of building a conceptual model is to simplify the field problem and organise the associated field data so that the system can be analysed more readily. Identifying the principal components of the flow system assists in their quantification and assessment of the overall water balance which serves as a basis for development of the computer model.

10.2 Computer modelling requires simplification of the relevant parameters because a complete reconstruction of a complex field system is not feasible.

10.3 An appraisal and analysis of all the available information has lead to a general understanding of the system. This is represented in the cross sections in Figures 10.1 and 10.2. The sections show a north-south slice across South Moor SSSI at high tide (Figure 10.1) and low tide (Figure 10.2). These show both the physical structure and the flow system under tidal influence.

General Condition

10.4 The physical representation is a simplification of geological sections as given in Figures 6.2 and 6.3. Geologically, there is a layer of drift overlying Chalk dipping from north to south. The ground surface flattens toward the coast where it lies between high tide and low tide levels. Along the coast is a sea wall preventing the flooding of the site by sea water at high tide. There is a single point of outflow for surface water via a 450 mm diameter concrete pipe fitted with a flap valve preventing inflow of seawater. Surface water outflow occurs only during low tide.

10.5 Groundwater flow through the drift and the Upper Chalk is from the north, down gradient toward the sea. The constant flow of groundwater toward the coast prevents the landward flow of seawater. There is a freshwater-seawater interface as indicated on Figures 10.1 and 10.2, although in reality, there is a transition zone (rather than a sharp interface) in which there is a gradual increase in salinity coastwards.

10.6 The results of hydrochemical analysis further support the existence of a transition zone. They also show that seawater intrudes further inland in the Drift than in the Upper Chalk. Assuming that the "interface" represents the *equilibrium* position of the boundary between fresh water and seawater, it is demonstrated that seawater encroaches further inland in the Drift than in the Upper Chalk.

10.7 Components of surface water flow consist of flow along the ditch network and run-off following rainfall.

Low tide condition

10.8 Figure 10.1 illustrates the low tide condition. At this time, the sea level is below the level of the site, the flap valve is open and any accumulated surface water can flow out into the sea.

10.9 Groundwater flow is principally horizontal and toward the sea. The piezometric surfaces of the Drift and the Upper Chalk are at similar elevations. That is to say, the water level in a piezometer installed in the Upper Chalk, is about the same as the water level in a piezometer installed in the drift at the same location. The groundwater in the Upper Chalk is under pressure, so that the piezometric water level represents a hypothetical water surface. The water level in the drift represents a real water surface, the water table.

10.10 The ditches are in hydraulic continuity with the drift, so that water levels within them are similar to water levels in the drift. At low tide, although the ditches contain water, there is generally very little flow along them.

High tide condition

10.11 Figure 10.2 illustrates the high tide condition. When the tide comes in, a number of changes occur. The most obvious is that the flap valve is forced shut preventing outflow of surface water. The high tide sea level is higher than the lowest parts of the SSSI site.

10.12 The equilibrium between the seawater and the groundwater changes so that the fresh water - seawater interface moves landward. This in turn causes a rise in hydraulic pressure in the groundwater. The increase in pressure is greater in the Chalk than in the drift. This is observed in the data from the monitoring of groundwater levels during tidal cycles.

10.13 The result is that instead of moving horizontally, the groundwater starts to move upwards. There is flow from the Upper Chalk to the Drift and from the Drift to the surface via the beds of the ditches. Water seeping into the ditches flows toward the outlet where it collects in a depression behind the flap valve. The phenomenon of seepage into the ditches during high tide has been observed during site visits.

10.14 As the tide goes out again, the flap valve opens, and if there is a sufficient build up of surface water, it discharges to the sea and conditions return to those described above.

10.15 These cross sections illustrate how the surface water that collects at high tide originates principally from groundwater. Run-off from rainfall events also collects in the ditch system, but the average volumes involved are believed to be much less significant than groundwater seepage. This is investigated further during the modelling phase of the study.

Water Balance

10.16 Prior to attempting to simulate the behaviour of surface and groundwater at the site with a computer model in order to predict future impacts of development, it is necessary to quantify the components discussed above. First the terms comprising inflow of surface and groundwater to the SSSI are discussed, followed by those contributing to outflow. The domain of the water balance is shown in Figure 10.3.

Inflow

(i) Groundwater flow through the chalk

Using data from the NRA's Catherington and Hilton Daubnay boreholes, the regional groundwater gradient 'I' toward the coast was estimated to be 0.005. In the summer of 1994 and 1995 the gradient averaged 0.006, whereas in the winter it averaged 0.004.

The borehole data collected from STM1 to STM4 do not show a pronounced change in groundwater gradient throughout the year, most likely due to the proximity of the coast and tidal influence. Consequently it was considered that for estimating the flow through the chalk into the north of the site, a gradient of 0.0055 would be employed in the winter months, and 0.0045 in the summer months. Some seasonal variation is therefore represented.

The depth of chalk is taken as 60m, and a permeability of 10m/day gives a transmissivity ($600m^2$/day) which accords with the lower range of estimates for chalk (500 to $2000m^2$/day) given in the NRA Aquifer Protection Policy of 1985.

(ii) Groundwater flow through the drift

The amount of groundwater entering the site from the north through the Drift is quantified using the same hydraulic gradient as for the Upper Chalk aquifer. Initial estimates of flow were made assuming a permeability of 10m/day.

(iii) Inflow from surface ditches

It has been assumed that 95% of the rainfall onto paved areas contributes to surface water runoff and that this is generated by 24,500m^2 of hard standing to the north of the SSSI. Using long term average monthly data from the Met Office, the average annual rainfall was determined to be 746mm,

(iv) Total Rainfall

Long term average monthly data supplied by the Met Office has been applied to determine the amount of rainfall over the area of the site. This is assumed to fall over 38.1 hectares.

(v) Leakage from Lavant Stream

A small amount of water enters the site from leakage from Lavant Steam. This has been assumed to be 0.1m/day along a length of 400m of stream.

Outflow

(i) Outflow to the sea through chalk

Different methods were used to assess the quantity of chalk groundwater discharging to the sea. The fluctuation of water level with the tidal cycle was assessed using the water levels measured during three of the four dates when water level was monitored over a tidal cycle, as indicated previously in Chapter 7, Table 7.3.
This technique takes into account the effect of the tidal cycle on the seepage of groundwater through the shore to Langstone Harbour. At high tide the sea level effectively acts as a barrier to groundwater flow, but when the tide ebbs, the coastwards groundwater gradient is re established, and most of the flow occurs at this time. The determination of outflow however requires an assessment of the storage coefficient, which is derived using the following relationship (Todd, Groundwater Hydrology, 2nd Edition, p245):

$$t_L = x\sqrt{(t_0 S/4\pi T)};$$ where

t_L = lag between high level in the piezometer and the high tide;
x = distance of the borehole from the coast;
t_0 = tidal period;
T = transmissivity in m^2 per hour (25m^2/hour); and
S = storage coefficient

The flow per unit length of coast line per half tidal cycle is then estimated (from the same source):

$$V = h_0 \sqrt{(2t_0 ST/4\pi)}$$ where

h_0 = the total tidal range measured in Langstone Harbour.

Values of h_0 were obtained from tidal records of variable quality at Langstone Harbour. As some of Langstone harbour's record was missing, a conversion factor was applied on certain dates for tidal tables for Portsmouth. Values of h_0 were derived for 11 December 1995, 14 May 1996, and 23 August 1996 when monitoring of groundwater levels over the tidal cycle took place. The average outflow through the Upper Chalk was estimated to be 3.6 m^3/s per metre length of coast.

(ii) Outflow to the sea through the drift deposits

A similar method of estimating the quantity of flow from the drift deposits to the sea was not applicable, as in general there was negligible tidal influence on the groundwater levels. Previous chapters have highlighted the connection between groundwater within the drift and ditch water levels, and this basis, for the purpose of the water balance, it has been assumed that half the flow through the drift in the north of the site discharges into the ocean with the remainder available for evaporation.

(iii) Outflow through the flap valve

Remote measurements were used to evaluate monthly totals.

(iv) Evapotranspiration

Long term average monthly rainfall and potential evapotranspiration were used to calculate the actual evapotranspiration and effective rainfall from data supplied by the Met Office using the procedure based on Grindley - 1969 (Met Office Memorandum No 38). Rainfall data was obtained from Havant Water Works (0.3km, altitude 8m) with backup from Farlington Reservoir (3.1km west, altitude 36m) and Hayling Island (7.2km south, altitude 4m). Climate data was obtained from Hayling Island with backup from Southsea (10km south, altitude 2m).

The results are presented below in Table 10.1. It should be noted that only the figures for Actual Evapotranspiration were used in the water balance, as rainfall has already been considered for inflow.

Table 10.1: Actual evapotranspiration and effective rainfall

Months	Rainfall (R)	Pot. Evap. (PE)	R-PE	Pot. SMD[1]	Actual SMD[1]	Actual Evap (Et)	Effect. Rain (ER)
Jan	70.8	14.3	65.5	0.0	0.0	14.3	65.5
Feb	53.2	16.5	36.7	0.0	0.0	16.5	36.7
March	63.8	35.4	28.4	0.0	0.0	35.4	28.4
April	45.2	58.4	-13.2	13.2	13.2	58.4	0.0
May	41.4	88.0	-46.6	59.8	59.8	88.0	0.0
June	43.3	88.3	-45.1	104.8	101.5	85.0	0.0
July	48.7	102.0	-53.4	158.2	113.0	60.2	0.0
August	48.4	89.6	-41.2	199.4	117.0	52.4	0.0
September	63.5	59.5	4.0	195.5	113.0	59.5	0.0
October	89.6	36.6	53.0	142.5	60.0	36.6	0.0
November	68.7	18.8	77.2	15.4	0.0	13.4	66.4
December	90.6	13.4	77.2	15.4	0.0	13.4	66.4
TOTALS	**736.1**	**620.9**				**538.4**	**197.1**

SMD[1] Soil moisture deficit.
All quantities in mm

(v) Evaporation from surface water

The conversion factor E_t/E_0 was applied to the actual evapotranspiration figure to determine the evaporation from an open water surface.

The ratio E_t/E_0 of varies by month between 0.6 and 0.8 in the south of England (Wilson, Engineering Hydrology, p249). From the topographic survey, the open water surface was estimated at approximately 1500m^2 (corresponding to summer conditions). A qualitative estimate for the total water coverage during the winter, when the ditches are fuller is 3000m^2.

It was considered that the quantity of water entering the SSSI through the disused sewer on the eastern part of the site was insignificant. The water balance does not take into account the quantity of sea water overtopping the sea wall. Apart from the fact that there is no measure of the volumes involved, such events are occasional and very short term.

Water balance conclusions

10.17 The water balance results are given in Table 10.2. The greatest single influence on inflow is groundwater flow through the Upper Chalk, accounting for 60 to 70%. This is also the variable with the greatest degree of uncertainty. Relatively small changes in permeability and consequently transmissivity, have a significant effect on the estimated total flows into the site.

10.18 Rainfall and consequently ditch flow derived from hard surfaces, is the most accurately defined source of inflow accounting for approximately 30% of the total inflow in the winter, and 20% in the summer.

10.19 Groundwater flow through the drift deposits and leakage from Lavant Stream are also relatively poorly defined, but account for only 5% to 8% of the total inflow.

10.20 Outflow to the sea through the chalk is the single greatest component of flow out of the strata underlying the site. It is encouraging that different methods yielded similar results in terms of flow through the Chalk.

10.21 Evapotranspiration from land is the best defined variable of outflow. In the winter it represents approximately 6% of the total outflow, but in the summer accounts for approximately 30%.

10.22 Over the course of twelve months, the ratio of outflow to inflow is 1.05, suggesting that the water balance calculations fairly represent the conditions observed at an annual scale. However the ratio varies significantly away from 1 in the winter and the summer. The proportion of outflow is too great in the summer, and low in the winter. The difference is most marked in the summer suggesting that perhaps evapotranspiration effects are overstated. An alternative explanation is that the calculation of chalk outflow is based on the response of tides piezometer levels to tides, and does not take into account seasonal variation in the groundwater gradient.

10.23 The water balance illustrates the importance of rainfall, evaporation and aquifer permeability. It should be noted that the numbers vary very significantly with small changes in aquifer permeability. These are the most poorly understood variables.

TABLE 10.2 WATER BALANCE

Water balance calculation on a monthly scale															
Chalk Aquifer		Gravel Aquifer													
K (m/day)	10	10		Rainfall	79.79	53.2	63.84	45.23	41.43	43.25	48.69	48.38	63.46	89.6	68.68	90.58	
Depth (m)	60	4		PE	14.26	16.47	35.44	58.39	88.01	*88.34*	*102.04*	*89.62*	59.5	36.6	18.82	13.39	
Width	600	600		AE	14.26	16.47	35.44	58.39	88.03	*84.95*	*60.19*	*52.38*	59.5	36.6	18.82	13.39	
outflow/m	3.6	3.6	3.6	ER	65.53	36.73	28.4	0	0	0	0	0	0	0	0	66.43	
Lavant Stream				i	0.0055	0.0055	0.0055	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0055	0.0055	0.0055	
Leakage (m/day)		0.1		openwater	3000	3000	3000	1500	1500	1500	1500	2000	2000	3000	3000	3000	
Area (m2)		400		E(t)/E(0)	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6	
																	Total
Water Balance Item & Assumptions					Jan	February	March	April	May	June	July	August	Sept	October	November	December	
					31	28	31	30	31	30	31	31	31	31	30	31	
INFLOW																	
Groundwater flow through chalk					61380	55440	61380	48600	50220	48600	50220	50220	50220	61380	59400	61380	
Groundwater flow through drift					4092	3696	4092	3240	3348	3240	3348	3348	3348	4092	3960	4092	
Inflow from surface ditch					1857.112	1238.23	1485.876	1052.728	964.2833	1006.644	1133.26	1126.045	1477.032	2085.44	1598.527	2108.25	
(95% runoff from 24500m2 (IBM building))																	
Total Rainfall					30395.6	20266.27	24319.53	17230.14	15782.55	16475.87	18548.21	18430.12	24174.77	34132.67	26163.3	34506	
(assume rainfall over an area of =380945m2)																	
Leakage from Lavant Stream					1240	1120	1240	1200	1240	1200	1240	1240	1240	1240	1200	1240	
(assume 0.1m/day for 400m2)																	
Total Inflow					**98964.71**	**81760.5**	**92517.4**	**71322.87**	**71554.83**	**70522.52**	**74489.47**	**74364.16**	**80459.8**	**102930.1**	**92321.83**	**103326.2**	1014534
OUTFLOW																	
Outflow to the sea through chalk					66960	60480	66960	64800	66960	64800	66960	66960	66960	66960	64800	66960	
(based on STM1,2,3,4 tidal performance)																	
Outflow to sea through drift					2046	1848	2046	1620	1674	1620	1674	1674	1674	2046	1980	2046	
Outflow through flap valve					7101	5112	1939	1487	929	1100	1049	891	1007	12784	6039	8899	
(measured remotely)																	
Evaporation from land at actual rate					5389.496	6224.754	13394.37	22155.79	33402.54	32233.85	22838.79	19849.14	22547.23	13832.79	7112.925	5060.684	
(area is 380,945 - water area)																	
Evaporation from water surface					71.3	82.35	151.8857	125.1214	165.0188	165.6375	191.325	224.05	148.75	137.25	94.1	66.95	
(enhanced evaporation rate)																	
Total Outflow					**81567.8**	**73747.1**	**84491.26**	**90187.91**	**103130.6**	**99919.49**	**92713.12**	**89598.19**	**92336.98**	**95760.04**	**80026.02**	**83032.63**	1066511
Outflow/inflow					0.824211	0.901989	0.913247	1.264502	1.44128	1.416845	1.244647	1.204857	1.147616	0.93034	0.866816	0.803597	1.051232

11. COMPUTATIONAL MODELLING

Introduction

11.1 Numerical modelling of groundwater flow at Southmoor SSSI has been undertaken. It represents a synthesis of the data collected and an attempt to recreate the groundwater conditions observed over the course of the study in a computer model whose inputs can then be modified to predict the changes in groundwater behaviour that could occur as the result of proposed developments to the north of the SSSI.

11.2 The groundwater model selected is MODFLOW, an industry standard 3D finite difference model which has been developed by the United States Geological Survey. This model is the most widely used of available groundwater models, and is often used in more complex groundwater problems.

Model Objectives

11.3 The modelling exercise involves the use of 'steady state' and 'transient' modelling techniques with different objectives. Modelling the transient state involves changing model parameters with time (for example to simulate seasons) whereas steady state does not, therefore representing a 'snap shot' typical of a longer period of time (for example average conditions observed over a year). A steady state model is not time dependent. Its output represents the long term equilibrium conditions, and allows the modeller to get a feel for the system before a more complex transient model is run. A transient (or non-steady state) model is time dependent, allowing changes over time to be modelled.

Steady State (Objective 1) - Simulation of Current Conditions

11.4 This can best be considered as an exercise which seeks to recreate the 'average' groundwater conditions over the course of the year. A measure of the success of the model is its ability to recreate contours similar to those shown in Figure 7.2 using reasonable parameters.

Steady State (Objective 2) - Prediction of Future Conditions

11.5 The next step is to use this model to predict the effect of the proposed development on groundwater within the SSSI. Again the groundwater contours would be considered to represent an 'average' annual condition.

Steady State (Objective 3) - Prediction of future conditions given certain constraints

11.6 One of several options for future management of SSSI is permanently closing the flap valve. The effect on groundwater levels could then be predicted in this scenario.

Transient State (Objective 4) - Simulation of Current Conditions

11.7 By specifying recharge and evapotranspiration for each month (based on long term average Met Office data), it is possible to simulate groundwater behaviour through an 'average year'. A measure of the success of the transient model is its ability to simulate the hydrograph of water levels collected during 1995 and 1996 at the STM boreholes, although this depends to some degree on how typical the study period was of 'average' conditions.

Model Calibration

11.15 After defining the geometry of the model it is necessary to use combinations of hydrogeologic parameters to simulate the observed aquifer behaviour. Table 11.1 shows the parameters which are required for steady state modelling, and the main values which were used in calibration for the annual groundwater condition. A brief discussion follows for each parameter:

Table 11.1: Model Parameters

Parameter	Units	Layer 1 (Drift)	Layer 2 (Chalk)
Horizontal Permeability	meters/day	20	10
Vertical Permeability	meters/day	0.02	0.1
Storage Coefficient	dimensionless	0.1	0.01
Porosity	dimensionless	0.2	0.02
Aquifer Recharge	meters/day	a) 0.0019, b) 0.000095, c) 0.0053, d) 0.00095	None
Evapotranspiration	meters/day	a) 0.00147 b) 0.0021 c) 0 d) 0.00074	None
Head Boundary (North)	(meters)	8	8
Head Boundary (South)	(meters)	0.3	0.3

Permeability

11.16 The horizontal chalk permeability for the chalk corresponds to a transmissivity of 600m^2/d (Transmissivity = permeability x aquifer thickness). This value was used in the water balance and is within the range of transmissivity for chalk given in the Environment Agency's (Southern Region) Aquifer Protection Policy (1985). The aquifer anisotropy has been represented by taking the value of vertical permeability as 1% of the horizontal permeability, a value commonly used in groundwater modelling. The permeability of the layer 1 is higher than that of the Upper Chalk, as would be expected in gravelly deposits, and the corresponding vertical permeability is also 1% of the horizontal permeability. The permeability of the Drift derived from model calibration is significantly higher than estimates derived from borehole permeability tests (slug tests) which gave a range of 0.1 to 0.3 m/day. Borhole tests represent only very local conditions and are often not representative of the average permeability of a geological layer, particularly of a mixed alluvium.

Storage Coefficient and Porosity

11.17 Both a lower storage coefficient and a lower porosity are assigned to the Upper Chalk. The storage coefficient for the Upper Chalk is within the range given in the Environment Agency's Aquifer Protection Policy (Southern Region) 1985. The coarser nature of the gravel compenent of the Drift accounts for its higher porosity.

Recharge

11.18 Recharge is applied only to Layer 1. The values listed in Table 11.1 correspond to:

a) 95% of average daily rainfall to vegetated surfaces,
b) 5% of average daily rainfall through paved surfaces,
c) 95% of the average daily runoff from paved areas applied to the model cells where ditches are present to the north of the SSSI (in addition to a)) in and around the Autoliv facility,
d) an intermediate value to be applied largely in the north of the model domain to account for residential and commercial development representing approximately 50% of the average daily rainfall total.

Evapotranspiration

11.19 Evapotranspiration is applied to Layer 1. The values listed in Table 11.1 correspond to:

a) average daily evapotranspiration from vegetated surface,
b) enhanced evapotranspiration from open water surfaces (where surface water is evident in the SSSI),
c) no evapotranspiration from paved areas,
d) intermediate evapotranspiration from the partially developed area to the north of the site.

11.20 The data is based upon long term average evapotranspiration derived from the Met Office for stations close to Southmoor SSSI

Constant Head Boundary

11.21 A constant head boundary was established along the south of the SSSI. The elevation was set at 0.3m rather than 0m in order to represent the salinity (therefore higher density) of the groundwater in the aquifer along the coast. This figure is chosen on the basis of calculations used to determine the likely depth of the saline wedge of sea water in the coastal aquifer. The constant head boundary of 8m established at the north of the model reflects the estimated position of the water table given surface water occurrence and topography at this location. As groundwater level within the Upper Chalk and Drift are similar, the same elevations are specified for each layer.

Sensitivity Analysis

11.22 In order to assess the variability of the model output to changing parameters, a sensitivity analysis was undertaken to establish the relative importance of the parameters. The parameters varied and the results of the analysis are given below in Table 11.2

Table 11.2: Sensitivity analysis

Condition Varied	Range Tested	Results
Horizontal Permeability Layer 1	10 to 30 (m/day)	The model is sensitive to changes in this parameter, although convergence criteria has to be relaxed for these model runs. Lower permeabilities result in a shift of groundwater contours towards the coast
Horizontal Permeability Layer 2	5 to 30 (m/day)	Increasing the permeability above 10m/day results in a flattening of the groundwater contours and increases the groundwater flows across the model. The flux across the study area previously calculated in the water balance is most closely matched with a permeability of 20 m/day, the slightly lower fluxes which result in the calibrated parameters are best explained by the slightly shallower groundwater gradient. Attempts to calibrate at the low end of the range (5m/day) were unsuccessful.
Aquifer Anisotropy	10:1 to 100:1	Reducing the anisotropy to 10:1 within Layer 2 causes a coastwards shift of contour of between 10m and 25m.
Constant Head (Layer 1 and 2)	7m to 9m	There is very little variation in head with flow for changes in constant head of up to 1m in layer 2. Layer 1 is susceptible to changes in constant head with contours shifting inland with an increase in constant head.

Transient Model Calibration

11.23 Essentially the same parameters were used in the calibration of the Transient State model as in the Steady State. The storage coefficients and evapotranspiration were the main parameters to change. Changing the evapotranspiration across several time steps provides the single greatest change in model output.

Model Results

Steady State (Objective 1) - Simulation of Current Conditions

11.24 The groundwater contours resulting from utilisation of the above parameters are shown in Figure 11.1. Contours from Figure 7.2 have been superimposed to permit a comparison of observed and predicted heads. These contours reflect the overall groundwater conditions throughout the year. It can be seen that the model contours have a similar distribution across the SSSI to the measured contours. The difference in contours is greatest beyond the west of the SSSI, however this is not surprising as there were no boreholes with water level data on which to use as a basis for contouring. Across the SSSI, the 1m contour line is well simulated. The divergence between the contours towards the Lavant Stream (particularly the 1.5m and 2.0m) is probably due to assigning a constant head boundary at the inlet to the Lavant Stream, and again the lack of field observation data towards this side of the model.

11.25 Overall the fit of the contours across the SSSI is reasonably close, and suggests the model acceptably recreates the observed conditions.

Steady State (Objective 2) - Prediction of Future Conditions

11.26 The model is changed to reflect the development of the site with particular emphasis on the increase in hard standing areas and the realignment of the ditches. Recharge to the ditches is increased and Figure 11.2 shows that south of the development area there is a small displacement in the contours towards Langstone Harbour, but overall there is really little

change. The southwards shift corresponds to a rise in groundwater level of no more than 10 to 15cm, with considerably lower rise in water level towards the flap valve.

11.27 The modest rise in water level is predictable, as a greater volume of run off is created from the increased area of hardstanding and is directed to the ditches at the top of the site. Evapotranspiration is similarly reduced with new hardstanding, leading to a small rise in water within Southmoor SSSI.

Steady State (Objective 3) - Future Management Conditions (flap valve closed)

11.28 The average daily flow out of the flap valve during the study period was approximately 138m^3. This quantity is equivalent to extra recharge to be applied to the ditch system and amounted to an extra 2.53 x 10^{-3} m/d of recharge applied to 89 cells along the ditches in the model.

11.29 The result of the extra application of recharge is that the contours in layer 1 are shifted markedly towards the coast, as is evident in Figure 11.2b in which the predicted water levels are compared with the post development simulation with the flap valve open. Higher water levels are to be expected as a result of closing the flap valve.

Transient State (Objective 4) - Simulation of Current Conditions

11.30 Figure 11.3 shows the groundwater levels for layer 1 predicted by the model at boreholes STM 1 to STM 4 over the course of an average year, with the levels measured during the course of the monitoring period. It is apparent that the model predicted changes in groundwater level which were similar to those measured in the field, which suggests that the model fairly simulates the groundwater level within the drift which feeds the ditches.

11.31 The transient model was run with changed recharge and evapotranspiration characteristics to show the effect of the future development on groundwater levels throughout the year (average conditions shown in Figure 11.2b). Figure 11.4 shows the groundwater levels which result. As with the steady state condition, there is a slight rise in groundwater level within the SSSI associated with the development, which becomes more pronounced further away from Langstone Harbour. The change ranges from approximately 3cm to 10cm.

Conclusions from the modelling exercise

11.32 The model has recreated the average groundwater conditions at the site and has predicted the average groundwater level change throughout the year. The effect of the proposed development has been simulated by adjusting the recharge and evaporation parameters so that the increased runoff from future hardstanding areas is concentrated within the ditches which are located around the Autoliv facility and extend towards the SSSI boundary.

11.33 The effect of the development is a slight rise in the groundwater level within the Drift deposits. This would be accompanied by an increase in ditch water levels.

11.34 In addition to the conclusions reached from the model studies it is also possible to conclude that the volume of runoff contributing to the SSSI during short duration, high intensity rainfall would be increased. This would result in more frequent inundation of the ditch system and surrounding areas by flushes of relatively fresh water for short time periods.

12. WATER LEVEL MANAGEMENT OPTIONS

Introduction

12.1 By considering a range of water level management options it is possible to investigate how modifications to the existing land drainage regime could potentially enhance the ecological interest of the SSSI. Following consultations with English Nature and the Environmental Research and Advisory Partnership it is understood that the following objectives should be considered.

(i) Increase the salinity of the southern area of the SSSI;

(ii) Lift surface water levels in the southern area of the SSSI;

(iii) Seek to maintain freshwater flows in the ditches in the northern area of the SSSI.

12.2 The wetland study has established that the SSSI dries out during the summer period. This is caused by a combination of a reduction in general groundwater levels and less frequent input from the upstream surface water systems. It has also been established that saline surface water is maintained throughout the year in the most southerly area of the SSSI by the action of upward seepage during high tides. In addition during high spring tides there is significant ingress of saline water as a consequence of localised overtopping of the bund and seepage through the bund.

12.3 The principle mechanisms controlling water levels within the SSSI are the tidal protection bunds, ranging in level from 2.3 mAOD to 3.6 mAOD; the ditches conveying water from the land upstream; the upflow of water through the underlying strata; and the outfall and flap valve at the south east corner of the SSSI.

12.4 To examine the objectives of the water level management plan a range of mechanisms have been assessed and the following principal options are discussed in this section:

(i) Removing the existing flap valve;

(ii) Modifying the flap valve to permit a limited flow of saline water to enter the SSSI;

(iii) Controlling water levels in the southern area of the SSSI;

(iv) Introducing artesian water from the underlying chalk via artesian boreholes;

(v) Installation of a pump within a chalk borehole;

(vi) Creating ponding in the ditch system to the north of the SSSI;

(vii) Direct recharge through runoff from the proposed development;

(viii) Diverting water from the Lavant Stream;

12.5 The implications of each of these options is discussed in the following text.

Remove the existing flap valve

12.6 Permitting water to freely discharge through the existing 450mm diameter outfall would result in water levels within the southern area of the SSSI being largely determined by tidal variations. Maximum water levels would be dependant on the astronomical cycles of the tide as modified by meteorologically induced surges.

12.7 A relationship has been developed between stage (level) and the volume of flood storage within the SSSI using the topographic survey information. By generating a 1m grid of elevations across the study area, volumes of storage for a given water level were calculated automatically using a contouring programme (SURFER).

12.8 An 'average' spring tide has been chosen from Langstone Harbour gauge information. During this tide, the tidal level rises to a peak approximately 2.34mAOD which is 1.7m above the centre of the outlet pipe. The pipe is submerged for approximately 5.5 hours. At neap tides, the peak tidal level is approximately 1.01m above the outlet pipe.

12.9 Analysis on the effect of the flap valve being left permanently open indicates that salt water levels within the SSSI would typically rise up to 1.4 mAOD and could infrequently be expected to reach approximately 1.6 mAOD (during periods when the lowest length of the sea wall was being overtopped). Figure 12.1 shows the extent of the area which would be inundated by saline water during an event which elevated the water levels within the SSSI to 1.4 mAOD.

12.10 During periods when there was also a significant inflow of fresh water from the north of the SSSI there would be extensive flooding on ground to the north of the SSSI.

12.11 At low tide it is likely that the majority of the saline water which would flow into the site with the high tide, would also drain from the site when the tide recedes.

Modifying the existing flap valve to permit a limited flow of saline water is permitted to enter the site

12.12 Restricting the quantity of water entering the SSSI through the flap valve could be accomplished by incorporating a smaller diameter orifice within the existing flap which would permit water to enter with the tide. At low tide, water could drain from the site through the existing flap, as is currently the case. The required modification to the flap valve assembly is shown in Figure 12.2.

12.13 The water levels expected within the SSSI under average spring and neap conditions are considered for the cases where flow into the site is restricted to flow through a 320mm orifice, and alternatively through a 150mm orifice. This restricts the cross sectional area of flow into the SSSI to approximately one third and one half of the above 'open valve' scenario, respectively.

12.14 Figure 12.3 illustrates the average extent of inundation under spring tide for a 320mm orifice. The level reached is 1.3m.

12.15 Figure 12.4 illustrates the average extent of inundation under spring tide for a 150mm diameter orifice. The level reached is 0.99mAOD. Under the typical neap tide, the level reached would be 0.93m.

12.16 There are two possible options for introducing an orifice within the flap valve. The first would involve permanently closing the 450mm flap valve and introducing a smaller orifice. This would be expected to restrict outflow from the SSSI as well as the inflow. The second would option would permit inflow to the SSSI via a smaller flap valve, hence outflow would

discharge through the 450mm flap valve and the system would empty at each tide.

Controlling levels in the southern area of the SSSI

12.17 A structure could be installed on the SSSI side of the flap valve which would accommodate removable wooden slats creating a 'damming' effect as shown in Figure 12.5. Rather than water discharging through the flap valve at low tide, water would accumulate within the site. The desired water level would be controlled manually, and any extra water would flow over the structure and discharge to the sea.

12.18 The water accumulating behind the structure would consist of surface water runoff and chalk groundwater forced up through tidal pressures, in addition to sea water which leaks into the site or overtops the bund. It would therefore be far less saline than the water which would be introduced from the previous options.

Introducing artesian water from the chalk via boreholes

12.19 At some piezometers installed in the Chalk, at high tide, the water level in the piezometer has been observed to rise high enough to overflow freely onto the ground. This effect is known as artesian flow. Such a system could be used to enable fresh water to flow directly from the Chalk and into the ditch system without pumping.

12.20 The quantity of water flowing freely under artesian pressure depends on the pressure head in the chalk relative to ground level. The ground in the southern part of the SSSI is lower, and hence the artesian effect is stronger in this area, than in the north of the site. The average groundwater pressure head from the monitoring data is about 1.57mAOD. The lowest topographic point above the standing water level is approximately 0.8m. Using this information and assuming chalk permeabilites as used in the model, the rate of flow out of a borehole is estimated at 40 cubic metres per day.

12.21 In the northern part of the site, borehole 3 has exhibited occasional artesian flow. However the average piezometric level of the chalk throughout the year is below ground level at approximately 1.85m. A topographic low point in this part of the site, near the meeting point of the two main ditches is approximately 1.4m. A borehole situated at this location could be expected to produce annually approximately $20m^3$/day. However in the summer months, the piezometric level falls to an average of 1.55m, and consequently flow would reduce to approximately $8m^3$/day. It should be noted that these estimates are based on globally averaged values and further physical data would need to be collected to verify that the wells would operate as predicted.

12.22 Relying on artesian flow to top up water in the ditches in the summer months at the top of the site may be difficult if there is a particularly dry summer, and the piezometric levels fall.

12.23 Drilling deeper into the chalk than the current borehole depth of 10m would likely increase the artesian flow. Increasing the depth of the borehole theoretically increases the flow obtained as well as increasing the possibility of intercepting a particularly permeable layer or fracture. Shell and auger drilling techniques should be capable of excavating the boreholes at 300mm diameter to a depth of 20m in the chalk. The borehole completion details could offer two possibilities. The borehole could be completed with plain casing through the drift layer, so that artesian water would flow directly to surface, or with slotted casing in the drift layer. In the second case water would flow predominantly into the drift resulting in saturation and recharge to the ditch.

12.24 Chalk groundwater abstracted from artesian wells in the south of the site will be saline, intermediate between fresh water and sea water. Increasing the depth of the borehole will increase the salinity. To the north of the SSSI in the vicinity of the existing STM boreholes, the chalk groundwater would be fresh. Increasing the depth should not increase the salinity appreciably.

Installation of a pump within a chalk borehole

12.25 To provide a more reliable and controlled supply of fresh water, a pump could be installed in a chalk borehole towards the north of the site. Water would be abstracted automatically depending on predetermined ditch water levels. It would be necessary to deepen a ditch in the vicinity of the borehole so that ditch water level could be monitored continuously. In order to abstract water in excess of $20m^3$/day, a license would be required from the Environment Agency. This option is represented schematically in Figure 12.6.

Creating ponding in the ditch system to the north of the SSSI

12.26 Areas of standing water could be created in the ditches in the north of the site, by blocking the ditches with large cobbles. Under current conditions, there would probably be little effect particularly in the summer months, when the ditches in this part of the site are largely dry.

Direct recharge of runoff from proposed development of the site to ditches

12.27 This option has been simulated, and the results discussed in the modelling section of the report. The model predicts a slight rise in groundwater level and coastwards shift of the contours in the drift. However the rise is small, and an elevation in ditch water levels in the summer months may not be evident.

12.28 Permitting direct runoff from surface water collection facilities within the proposed development would inevitably result in periods when the land on the SSSI and to the north would be 'wetter' and subject to more frequent inundation. To ameliorate the severity of this effect, it would be possible to permit water from roof areas to contribute directly to the underlying strata using soakage pits. (These pits would need to be equipped with overflows to prevent overtopping during the periods when groundwater levels are exceptionally high).

12.29 Pollution control measures would be required to intercept runoff from parking areas.

Diverting Flow from the Lavant Stream

12.30 Up to $20m^3$ of water could be collected from the Lavant Stream on a daily basis without an abstraction license. Although an initial review of water quality in Lavant Stream suggested water of reasonable quality, there would be concerns over the water quality particularly with regard to mercury. Whilst chemical analyses collected from the stream over the course of the wetland study have not shown elevated levels of major parameters, it is possible that silts within the Lavant Stream could contain contaminants.

12.31 A license to abstract volumes in excess of $20m^3$ per day would be required from the Environment Agency. Whilst this theoretically could be regarded as placing a strain on existing water resources, the position of the site at the bottom of the Lavant Stream catchment may offset potential difficulties.

12.32 The control mechanism would need to be designed to prevent fresh water flows flushing through the northern part of the SSSI, as this could have an adverse effect on the habitat.

Summary of Options

12.33 The above options are summarised in Table 12.1.

Table 12.1 Options for wetland management

Option	Effect	Comment
Remove the existing flap valve.	Tidal flows into the SSSI with water level rising to approximately 1.4m with spring tides.	Saline water is introduced to the site on a daily basis. Water levels inside the SSSI vary with the tide
Modifying the existing flap valve so that a controlled volume of saline water is permitted to enter the site	Tidal flows into the SSSI with water level rising to 1.3m or 0.99m with spring tides depending on orifice diameter	As above but saline water reaches a lower level. The difference between spring and neap levels would be 5cm to 10cm.
Controlling levels in the southern area of the SSSI	Ditch flow and groundwater set to levels. No direct tidal influence through ingress of sea water through flap valve	Water would be far fresher, with little daily variation in water level (unless combined with modification of the flap valve)
Introducing artesian water from the chalk via boreholes	More effective in the south of the SSSI, flows depending on aquifer parameters which may vary and be unreliable	Fresh water introduced in the north of the SSSI, fairly saline in the south. Flows could be very low in the north of the site
Installation of a pump within a chalk borehole	Would particularly benefit the top of the SSSI in the summer months	Would ensure a prescribed water ditch water level in the vicinity of the borehole with fairly fresh water. Would have to be carefully managed
Creating ponding in the ditch system to the north of the SSSI	Would have little effect in the summer months	
Direct recharge of runoff from proposed development to ditches	Would result in a modest rise in water levels within the drift, although may not be very evident in the summer would result in flooding during more severe rainfall events	The best way of ensuring an influx of fresh water in the north of the site, assuming interceptors are effective.
Diverting flow from the Lavant Stream	Potential source of freshwater at the top of the site	Potentially problematic, subject to pollution, regulatory control.

Preliminary conclusions on options for wetland management

12.34 It is considered that the objectives of introducing more saline water to the south of the SSSI are best met by modifying the flap valve. The dimension of orifice required would depend on

the desired water level. The fluctuation of the tides would be reflected in the water levels within the SSSI. The volumes that would flow into the site would be far greater than could be achieved by tapping saline artesian flow from the chalk in the southern part of the site. The smaller orifice flap fitted to the existing flap valve would best be suited to achieving the first two objectives set out in paragraph 12.1.

12.35 To increase the amount of fresh water in the ditches in the north of the site, it is considered that boreholes, together with the runoff from the future development area are the most suitable sources of water. However, relying upon unassisted artesian flow in the summer may yield an insufficient quantity of water. Installing a pump would overcome this problem, but would introduce additional costs and a long term operational and maintenance requirement.

13. CONCLUSIONS

13.1 The Wetland Study contains a review of previous work undertaken at the site but concentrates on analysis of the field work undertaken in 1995 to 1996. It has facilitated a better understanding of the hydraulic mechanisms operating within South Moor SSSI and environs from which an appreciation of the effect of future management options has been gained.

13.2 A review of the historical mapping indicates that the volume of flow of water through the SSSI has been artificially influenced since at least as far back as 1866. In the earlier records it is evident that flow in the ditches has been controlled by a system of sluices on the Lavant Stream (Mill Stream).

13.3 Geological information shows that the site consists of alluvial clay overlying gravel and resting upon chalk in the east, with Brickearth (similar to gravel) in place of the alluvial clay in the west. Geophysical evidence points to the presence of an erosional channel in the top of the chalk along the length of the SSSI. The presence of a main sewer oriented approximately north east to south west across the site represents a linear area of filled ground across the site.

13.4 Groundwater is present both within the Upper Chalk and the overlying drift deposits. The direction of flow is from the north to the south. Further inland, the Upper Chalk is a major aquifer dominated by fissure flow. Within the SSSI, groundwater levels within the Upper Chalk are influenced by tide, the effect reducing with distance from Langstone Harbour. In the southern part of the SSSI, leakage from the Upper Chalk recharges the overlying strata. By contrast, a significant tidal influence is not observed within the overlying strata.

13.5 Surface water is present in the southern portion of the ditches which extend from the SSSI towards the Autoliv facility. For much of the year the ditches in the northern part of the SSSI are dry. The small amount of water in the ditch close to the Lavant Stream (opposite the Autoliv car park) is probably derived from leakage from Lavant Stream. The ditch water is primarily a surface expression of groundwater within the drift strata, and the underlying chalk. A contribution is derived from the paved areas to the north of the site. Close to the flap valve in the south of the site are two small areas where ponding of surface water is essentially permanent. Overtopping of the sea wall occurs occasionally with very high tides.

13.6 The flap valve in the south of the SSSI enables surface water collecting in the site to discharge to Langstone Harbour at low tide. The flow which was measured over one year shows an imperfect correlation with rainfall. Discharges occurred coincident with spring tides at times when there was no rainfall. The regular discharges at monthly intervals over the summer is further evidence that sea water enters the site when there are spring tides. There are several ways in which the sea water enters - through the drift, the Chalk, and over and through the sea wall.

13.7 Chemical analyses of the groundwater samples from within the SSSI confirms that there is mixing between fresh water and sea water in the southern part of the site. In the north of the SSSI, the groundwater is fresh, indicating a lack of influence from sea water. Chemical analyses of groundwater within the drift shows a far higher influence from sea water in the southern part of the SSSI than is noted in the chalk groundwater. Ditch samples taken from the Lavant Stream upstream of the SSSI and from the northern part of the SSSI indicate fresh water with no saline influence.

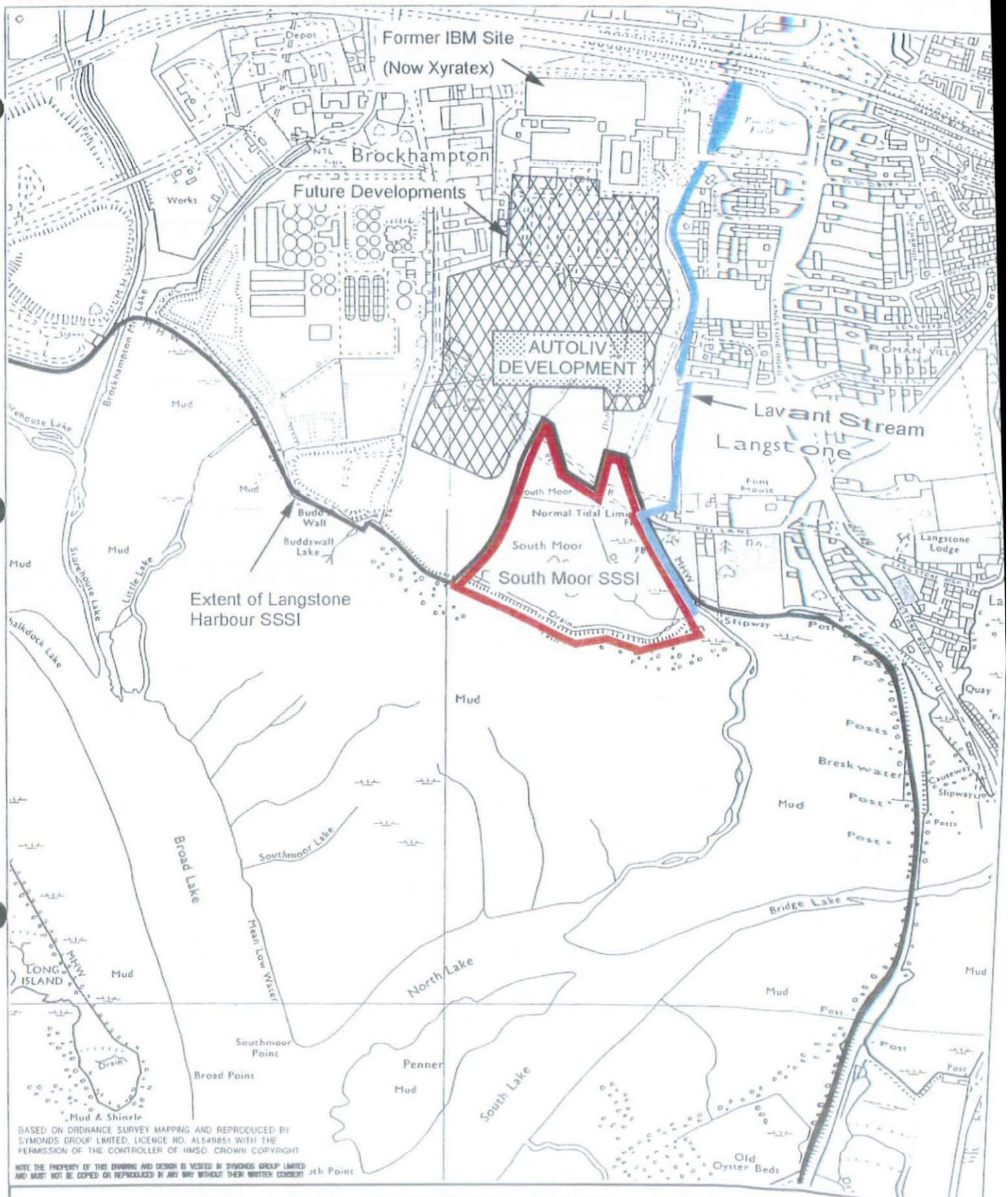
13.8 The components of flow through the site have been simulated using a computer model. The model was successful in recreating the observed groundwater contours within the drift deposits, which are the most relevant for study of water flow within the ditches. The model

also predicted how the groundwater levels within the drift would vary over the course of the year based on long term rainfall and evaporation data.

13.9 Following the successful recreation of the water levels at the current time, the model was used to predict the impact of development. It was determined that the additional runoff from new paved areas would have a very small impact on groundwater levels within the drift and consequently water levels within the ditches. There is a slight coastwards shift of the groundwater contours and a rise in the order of centimetres. However, it would be expected that volumes of water within the ditches would be increased during periods of short duration, high intensity rainfall.

13.10 The findings of this report with respect to the likely very limited impact of development on the water balance of the SSSI is in accordance with several earlier reports, most notably the Ecological Statement of 1993 prepared by the Environmental Research and Advisory Partnership. Options for future management of the site have a greater scope for changing the site water balance than any future development.

13.11 A number of alternatives for future management of the site have been examined. These have generally concentrated on making the SSSI wetter. The water levels which would be expected within the SSSI as a result of leaving the flap valve completely open have been determined. Methods of introducing more water to the ditch system in the north of the site have included introducing groundwater from artesian flow from the chalk. Whilst all of these methods are 'artificial' they would to a degree be mimmicking historic controls that used to be in place in the middle of the last century.



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SITE LOCATION AND SCHEMATIC POSITION OF FUTURE DEVELOPMENT

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KRD			APR'97	1:10 000	E.Grinstead	Figure 1.1	



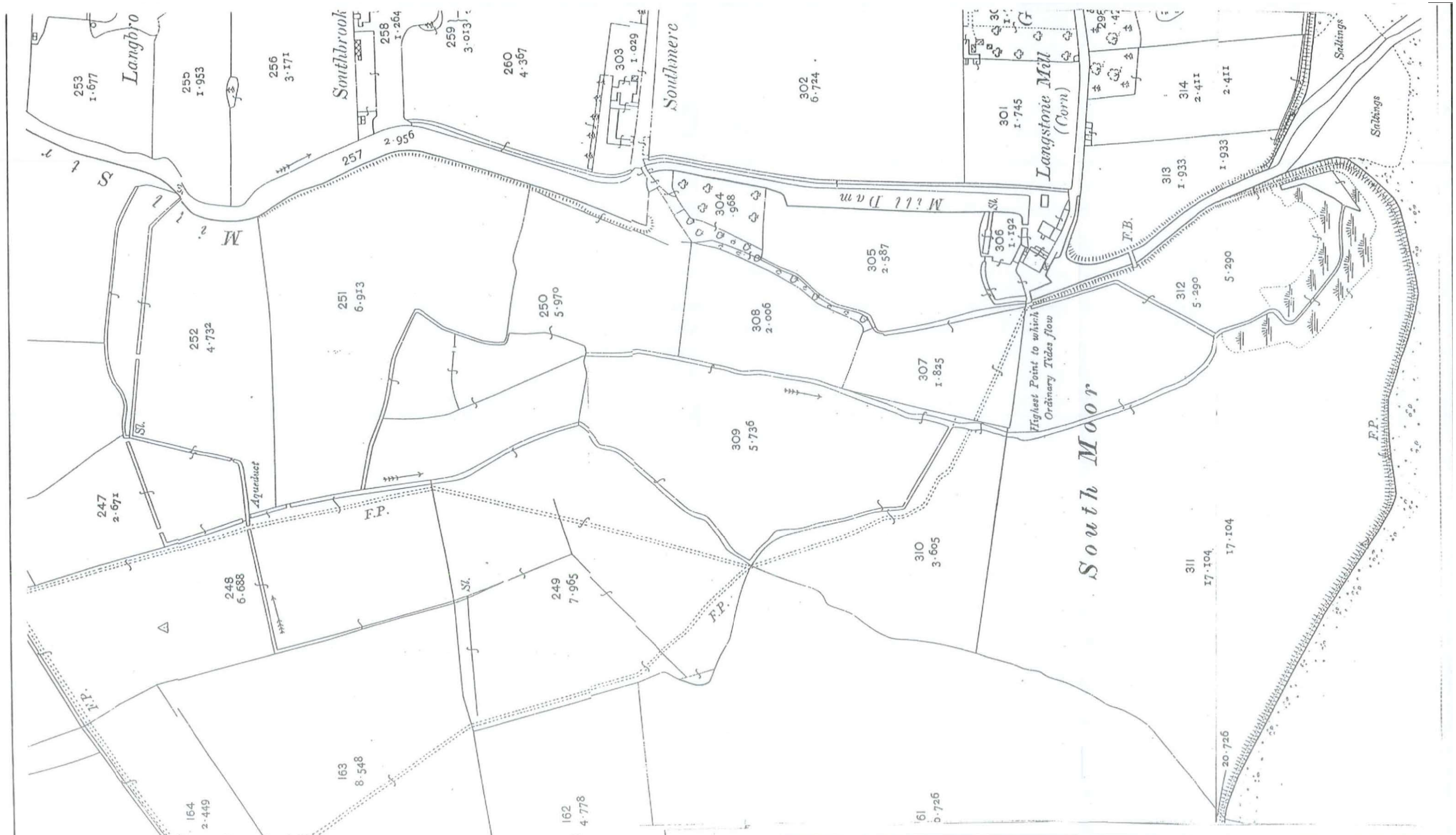
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HISTORICAL MAPPING 1866

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GC			APR'97	N.T.S.	E.Grinstead	FIGURE 2.1	

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HISTORICAL MAPPING 1909

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KT			JUNE 96	1:2534	E.Grinstead	FIGURE 2.2	



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KT			JUNE 96	1:10 560	E.Grinstead	FIGURE 2.4	

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SOUTHM

9641
2·58

3·05

0135
4·69

Track
Drain

Path

2837
1·68

3238
1·30

Drain

2618
5·60

Drain

Drain

4532
·30

B M 19·

El Sub Sta

LANGSTONE ROAD

Langstone Dairy Farm

Southmere

Track

4320
·83

LANGSTON

4415
·24

4013
1·22

5515
10·37

1907
3·44

South Moor

4006
1·25

Flint Lodge

Flint House

F B

3400
7·43

3900
·32

SI

SI

0006
22·26

2000
·62

2000
8·23

2800
·02

2800
5·11

3400
·06

Normal Tidal Limit

3900
·13

Driftway House

Dormers

4399
·06

West Mill

MILL LANE

Issues

Gulls Way

Track

5593
1·46

Drain

South Moor

Drain

Drain

4687
2·18

5085
·78

Slipway

5783
2·69

Drain

Landing Stage

Slipway

Groyne

Mean High Water

2478
6·11

2774
2·84

Path

Drain

Groyne

Wall

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KT			JUNE 96	1:2500	E.Grinstead	FIGURE 2.5	